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AVer FC1020-P

User Manual

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Preface

The FC1020-P is a compact cube camera for indoor use with two-way audio communication. It has the added security of a Micro SD based local backup capacity ensuring that images of events also save locally when the alarm is triggered or the network is down. This compact camera offers HD720p resolution and advanced features including intelligent motion detection and privacy masks. The 1.3-megapixel H.264 FC1020-P camera can provide your system with good quality, discreet indoor surveillance.

Product Specifications

- 1M cube camera
- HD Definition (720p) support
- Built-in IR LED (distance :8 Meter) for night view
- Support PIR function
- Digital Wide Dynamic Range
- Power over Ethernet (PoE)
- H.264/MJPEG compression formats
- microSD card backup (SD card is not included)
- 2-way audio
- Adjustable shutter speed
- Support iPhone/ iPAD/ Android phone and tablet
- Free bundled 32-CH AVer NXU Lite recording software

Specifications

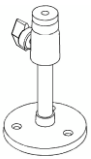
Hardware	
CPU	Multimedia SoC
RAM	128 MB
Flash	16M
Image sensor	1/4” CMOS (1 Megapixel)
Lens Type	2.8mm@F1.8, Megapixel fixed lens
View Angle	76°(H), 47°(V)
Shutter time	1/10~1/24,000 sec
Min. illumination	Color : 0.3 Lux (IR LED ON) B / W: 0 Lux (IR LED ON)
I/O	1 Sensor in /1 Relay out
MIC in	1
Audio Out	G.711(64K) and G.726(32K,24K) audio compression Input : MIC built-in Output : 3.5mm phone jack, or Speaker Support 2-way audio
IR distance	8 Meter
PIR	Yes
Power Over Ethernet	Yes
Power Consumption	DC12V : 2.6W(IR Off), 3.9W(IR On); PoE : 3.22W(IR Off), 4.18W(IR On)
Dimensions	62mm x 100(mm)x 44(mm)
Operation Temperature	0°C ~ 45°C
Weight	150g (without bracket); 270g (with bracket)
Network	
Ethernet	10/100 Base-T
Network Protocol	IPv6, IPv4, HTTP, HTTPS, SNMP, QoS/DSCP, Access list, RTSP, TCP/ IP, UDP, SMTP, FTP, PPPoE, DHCP, DDNS, NTP, UPnP, 3GPP, SAMBA, Bonjour

System	
Video Resolution	1280x800@30fps,1280x720@30fps,800X600@30fps, 640x480@30fps, 320x240@30fps, 176x144@30fps
Video Adjust	Brightness, Contrast, Hue, Saturation, Sharpness, AGC, Shutter Time, Sense-up, D-WDR, Lens Distortion Correction, Flip, Mirror, Day&Night adjustable, Red Gain and Blue Gain, Denois, Anti Fog
Triple Streaming	Yes
Image snapshot	Yes
Full screen monitoring	Yes
Privacy Mask	Yes, 5 different areas
Compression format	H.264/ M-JPEG
Video bitrate adjust	CBR, VBR
Motion Detection	Yes, 3 different areas
Triggered action	Mail, FTP, Save to SD card, DO, SAMBA
Pre/ Post alarm	Yes (Pre: 5 secs/ Post: 5 secs)
Security	Password protection, IP address filtering, HTTPS encrypted data transmission, QoS/DSCP
Firmware upgrade	HTTP mode, can be upgraded remotely
Simultaneous connection	Up to 10
Audio	Yes, 2-way (mono)
MicroSD/SDHC card management	
Recording trigger	Motion Detection, IP check, Network break down (wire only),Schedule, DI
Video format	AVI, JPEG
Video playback	Yes
Delete files	Yes

Web browsing requirement	
OS	Windows 7, XP Microsoft® IE 8.0 or above **[Note]** Please enable “Compatibility View” while using IE 10 or above.
Hardware Suggested	Intel® Dual Core 2.53GHz, RAM: 1024MB, Graphics Card: 128MB
Mobil support	iOS 5 or above, Android 1.6 or above.

***SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.**

Package contents

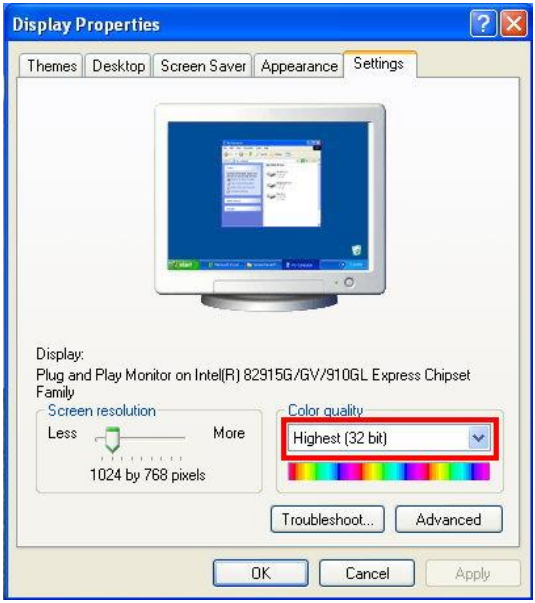
Item	Descriptions
	1. FC1020-P
	2. Bracket
	3. Screw pack
	4. Power Adaptor (Optional)
	5. CD (User's Manual and Quick Guide, NVR software included)

Product Installation

Monitor Setting

1. Right-click on the desktop. Select " **Properties**"

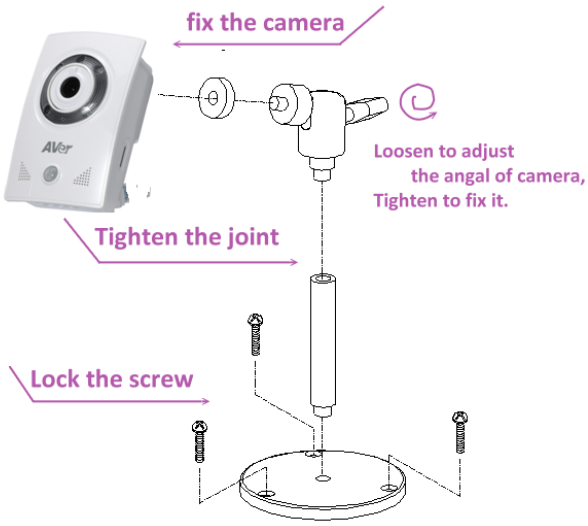
2. Change "Color quality" to "**Highest (32-bit)**".



Hardware Installation and I/O Pin Assignment

1. **Install with bracket**

   Please refer to the picture for camera installation. Use the screws to lock the bracket to the wall or ceiling, and then connect the camera to the bracket. There's a knob on the back of the bracket. Loosen the knob and you can adjust the angle of camera. Tighten it to fix the angle.



2. **Connector Instruction**

The camera connectors are as below. Connect the power and the Ethernet cable with the camera, and set it according to your network environment.

3. **Adjust focus**

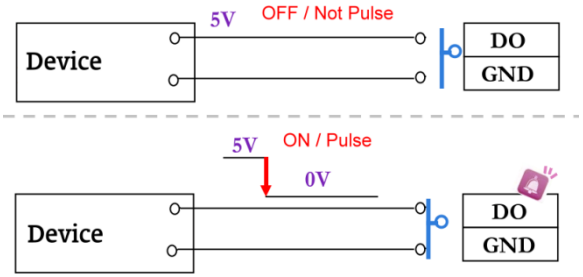
Use the rotary dial to adjust focus until the image is clear.

4. **I/O Configuration**

I/O Connection

a. Please connect the G & DO pin to the external relay (buzzer) device

When no event happens, DO output is 5V (DO and GND are disconnected). When the camera detects an event happening and triggers an external alarm, DO output is 0V (DO and GND are connected).



b. Please connect the G & DI pin to the external trigger device.

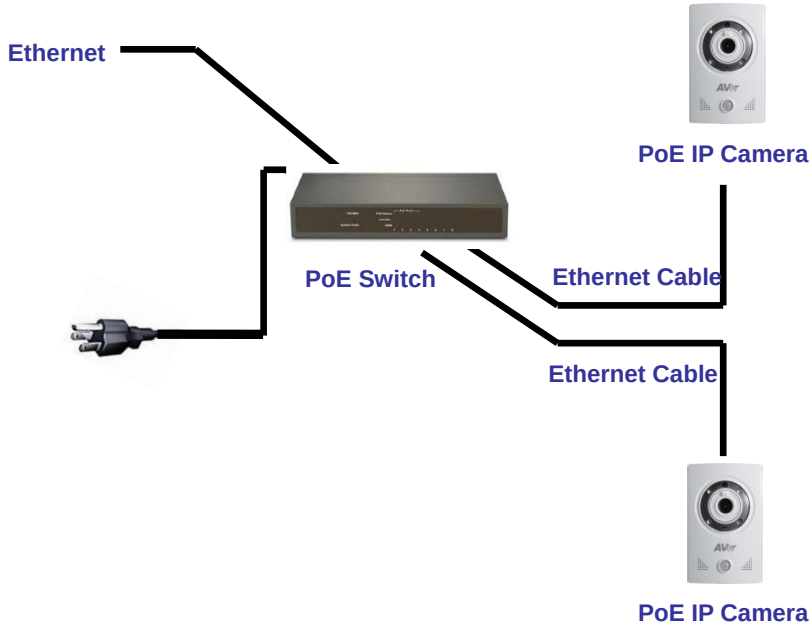
If you select "N.O" in "Input sensor setting", when an external devise or circuit makes DI and GND pin connected, the camera input alarm is triggered, and then camera will execute the action user has set, for example, send snapshot to E-mail address.

If you select "N.C" in "Input sensor setting", when external devise or circuit makes DI and GND pin disconnect, the camera input alarm is triggered, and then camera will execute the action the user has set, for example, send snapshot to E-mail address.

Power Over Ethernet (PoE)

Set up the IP camera through Power over Ethernet (PoE). PoE is a technology that integrates power into a standard LAN infrastructure. It enables power to be provided to the network device, such as an IP camera, using the same cable that is used for network connection. It eliminates the need for power outlets at the camera locations.

[Note] PoE (Power Over Ethernet) (Optional) 802.3af, 15.4W PoE Switch is recommended.



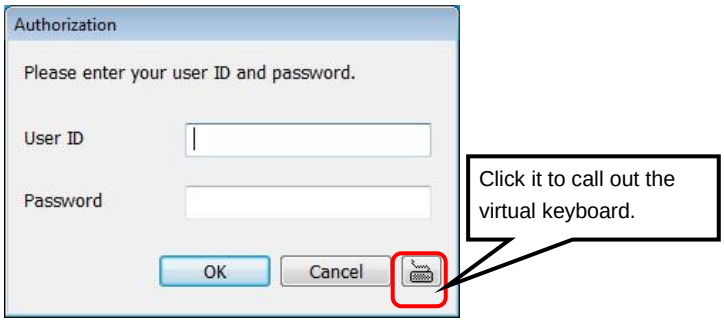
IP Assignment

There are two ways to find IP Cameras:

- Finding IP Camera by using the "**NXU Lite recording software**"
- Finding IP Camera by using the "**AVer IPCam Utility**"

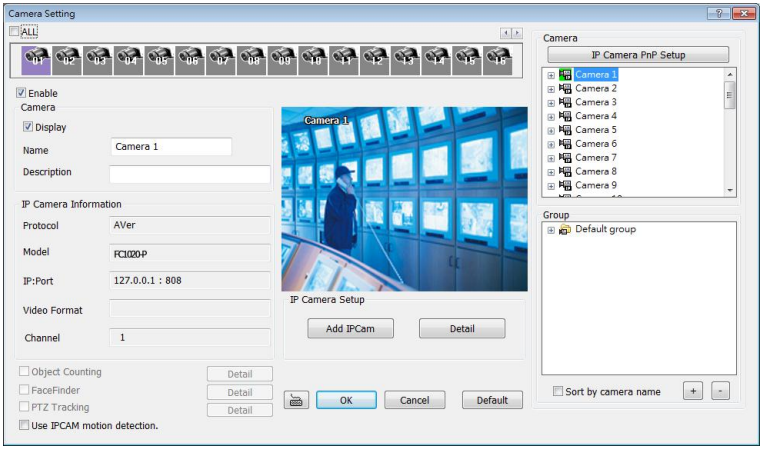
Finding IP Camera by using "NXU Lite recording software"

1. The NXU Lite software is in the attached software CD. Before launching it, please install the software first. During the installation process, users will be required to input a User name and Password for login NXU Lite system. Users can define the User name and Password as desired. Please refer to the NXU Lite user manual for detailed installation instructions.
2. To run the application, double-click  on your PC desktop or click **Start** > **Programs** > **DVR** > **NXU Lite**. For security purposes, some of the features require you to enter the User name and Password before it can be accessed. When the Authorization dialog box appears, key in your User ID and Password. (If this is the first time, enter the one you have registered when installing the software.



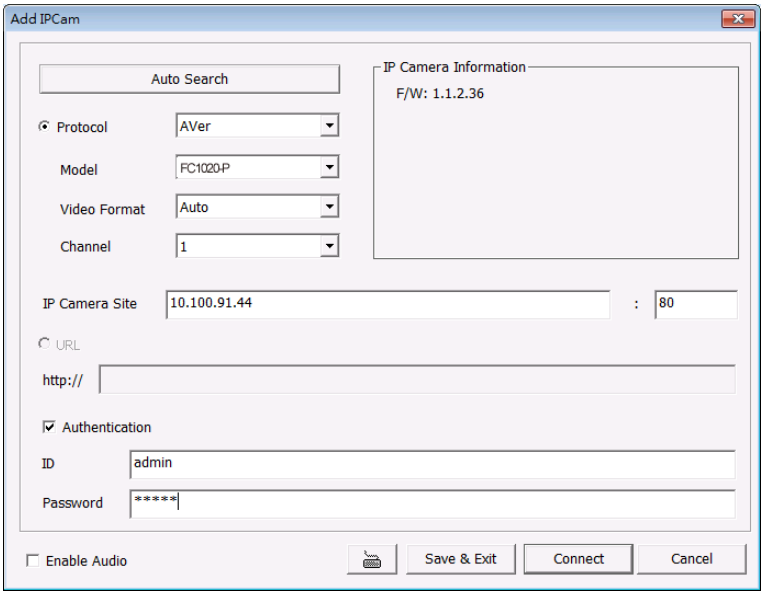
3. Click the “**Setup**” button.

4. Click the “**Add IPCam**” button.

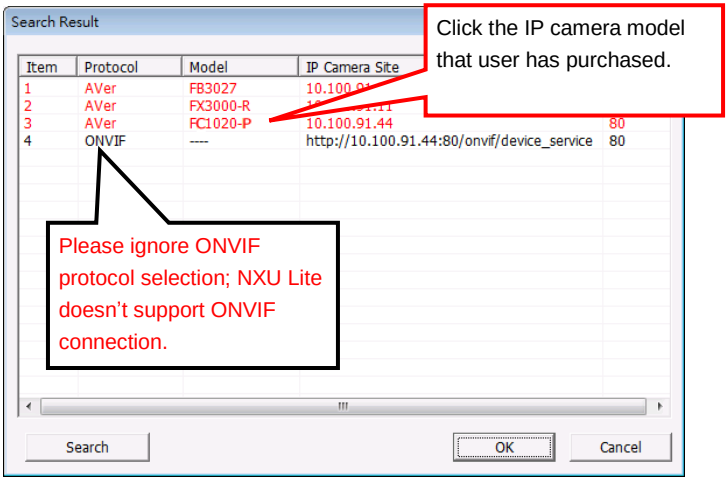


5. Select “**IP Camera**” item.

6. Enter IP Camera's ID and Password (default is **admin/admin**) and click "**Auto Search**" to find camera.

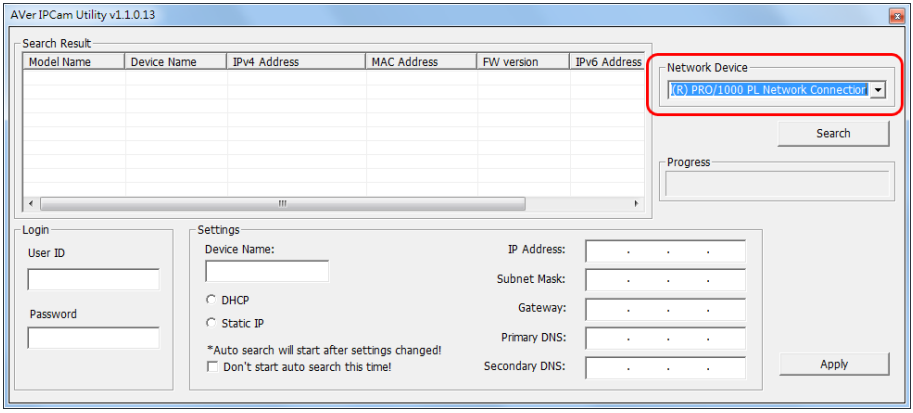


7. In the Search Result window, click the IP camera model that the user has purchased (**Please ignore ONVIF connection item**); the camera is in red text that is configurable. Users can Click on the camera in the red text and configure the IP camera's settings; even if the IP camera is not in the same IP segment. Press "**OK**" to go back to the previous screen and press "**Connect**" to start live view.

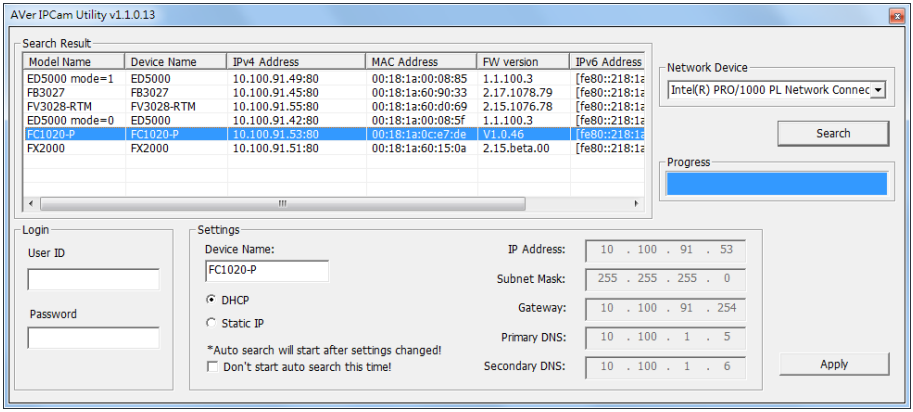


Finding IP Camera by using “AVer IPCam Utility”

1. Use the software, “**AVer IPCam Utility**” to assign the IP address of the IP camera. The software is in the attached software CD.
2. Run the IPCam Utility
3. Select the proper network adapter and click [Search] to begin searching.



4. Select and double click the IP camera you want to access. If you want to change the setting of the selected IP camera, enter the user ID, correct password, and change the settings and then click **Apply** button. This will change the setting and rescan the network again.



5. The IE browser will open and direct you to IP camera login page. This requires IPViewer.ocx to run. If the IE ActiveX warning message appears, click to allow running the add-on.

Default ID: admin
Default Password: admin

[Note]

- The default IP address is: 192.168.1.168
- The default ID and Password are both ”**admin**”.
- You can’t enter a device name in Chinese or any other special characters (' " \ & ^).
- Gateway number can’t be “0”.
- IP camera device name should be less than 30 digits

Using NON-DHCP Server/Router Network

In Non-DHCP server/router network, the static IP address must be assigned to the device each time when adding another IP camera to the network; the default IP address of the current one must be changed to avoid conflict.

Please make sure the Subnet of the PC's IP address and the IP camera's IP address are the same.

[Example]

The same Subnet:

IP camera IP address: 192.168.1.168

PC IP address: 192.168.1.100

Different Subnets:

IP camera IP address: 192.168.1.168

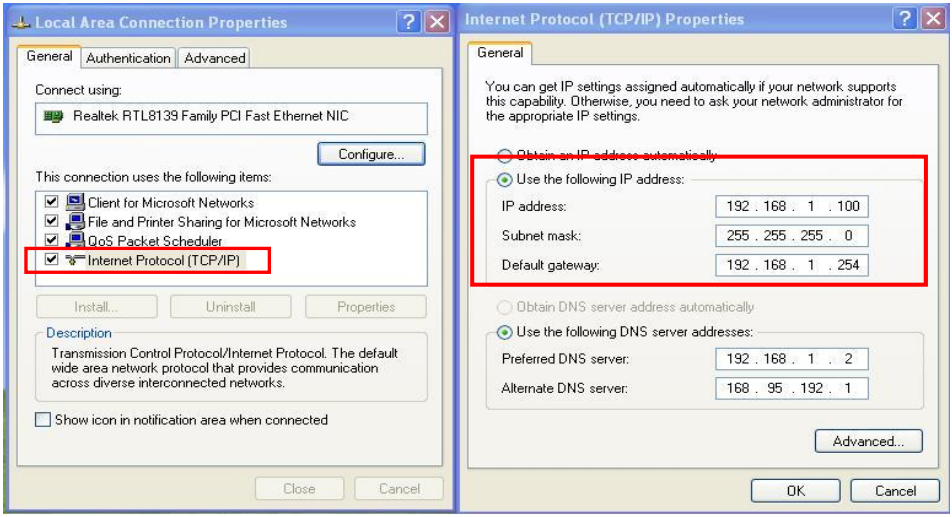
PC IP address: 192.168.2.100

To Change PC IP Address:

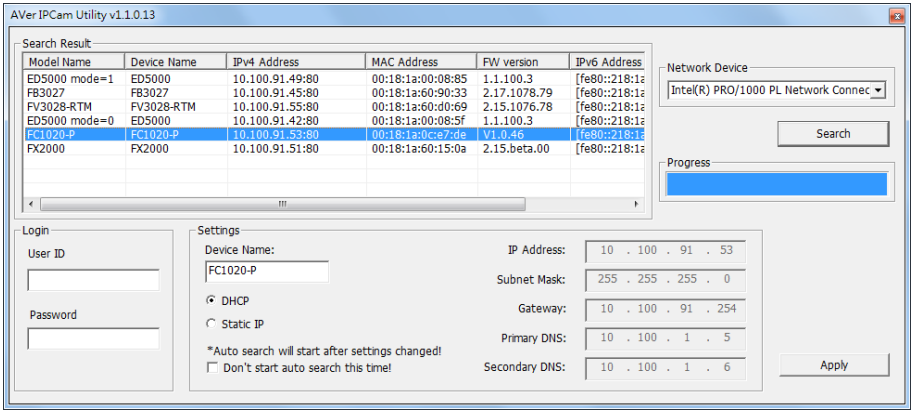
Control Panel→Network Connections → Local Area Connection Properties → Internet Protocol (TCP/IP) → Properties

Please make sure your IP camera and PC have the same Subnet. If not, please change IP camera subnet or PC IP subnet accordingly.

PC's IP address:



IP camera IP addresses:



A quick way to access remote monitoring is to double-click on a selected IP camera in “Camera Name list” in AVer IPCam Utility. Then, the IE browser will open and connect to IP camera.

Then, please key in the default “**ID**” and “**Password**”, both of which are “**admin**”.

[Notes] Please enable “Compatibility View” while using IE 10 or above.

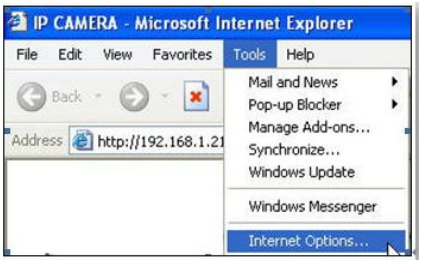
Install ActiveX Control

The first time you attempt to view the camera video via Internet Explorer, it will ask you to install the ActiveX component.

If the installation fails, please check the security settings for the Internet Explorer browser.

1. IE → Tools → Internet Options… → Security Tab → Custom Level… → Security Settings → Download unsigned ActiveX controls→ Select "**Enable**" or Prompt.
2. IE → Tools → Internet Options… → Security Tab → Custom Level… →Initialize and script ActiveX controls not marked as safe → Select "Enable" or Prompt.

1



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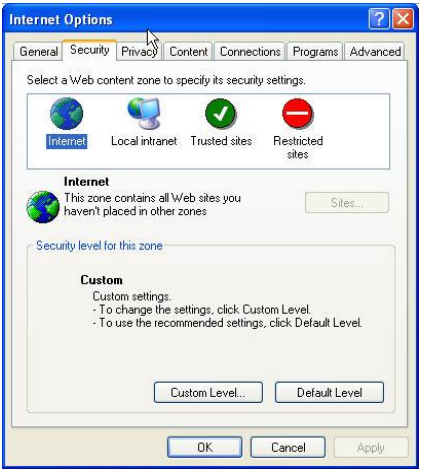


3

4

5

When the following dialogue box appears, click “**Yes**”.

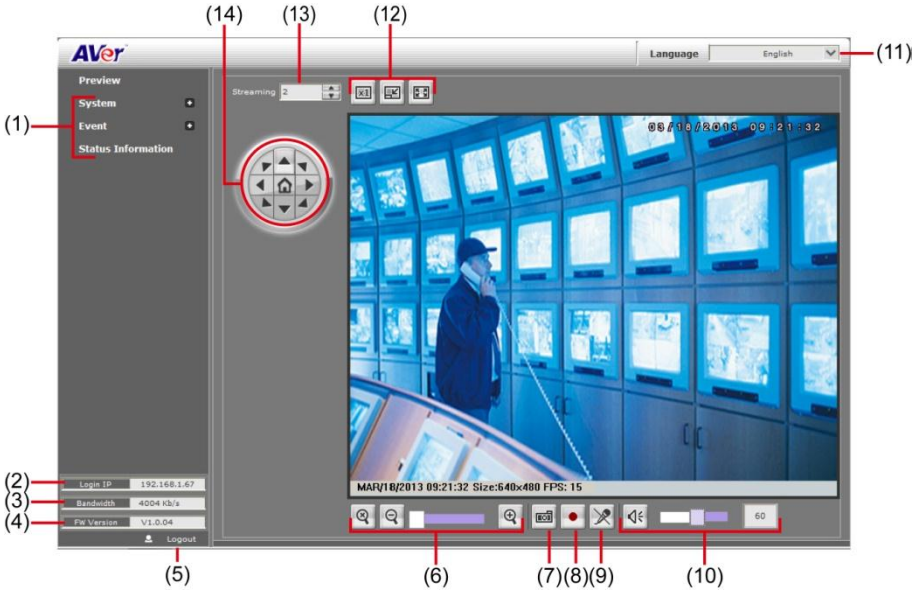
Using the IP Camera Browser Interface

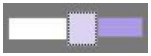
The admin has full access to the IP camera browser interface. You can expand the menu on the left and navigate to access all the features.

Preview

Launch the Internet Explorer browser, type the IP address of the IP camera in the address field. It will show the following dialogue box. Key-in the ”**ID**” and “**Password**”. The default ”**ID**” and “**Password**” are both “**admin**”.

Once connected to the IP camera, the following program interface will appear.



Name	Function
(1) System/Event/Status Information	Set up IP camera's configuration.
(2) Login IP	Show PC's IP address
(3) Bandwidth	Show current IP camera's transmitting bandwidth
(4) FW Version	Show IP camera's current firmware version
(5) Logout	Exit the application
(6) Zoom control	 Reset zoom level.  Increase zoom level.  Decrease zoom level.  Use the scroll bar to zoom in or zoom out the video screen
(7) Capture	 Capture and save the image on the screen in *.bmp format
(8) Record	 Start/stop audio and video recording. The recorded video will be saved in *.avi format.
(9) 2-way Talk	 Click the Microphone button to talk to IP camera side from user site. Click this button again to mute this function.
(10) Speaker	 Turn on the PC's speaker so that PC side can hear sound from IP camera side. Click this button again to mute this function.  Use the scroll bar to adjust the speaker volume.  It shows the current speaker volume's value.
(11) Language	Select the browser interface language.

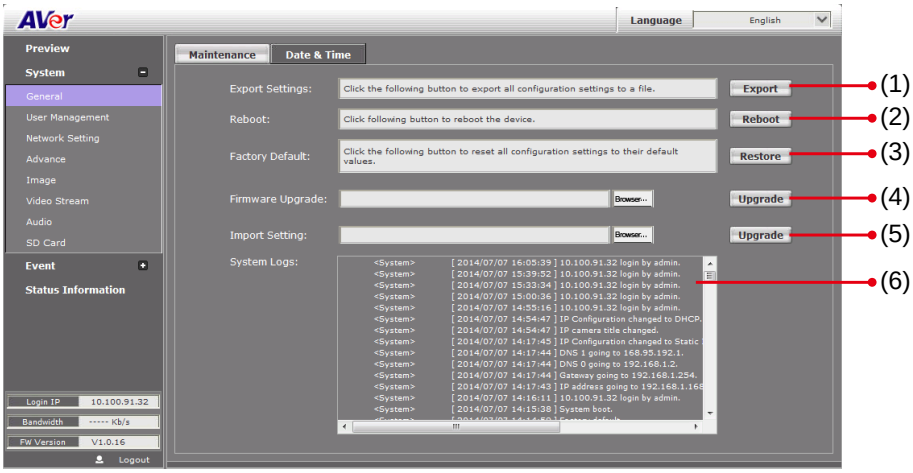
(12) Video screen	Change the video screen display.  Display the actual video pixel size  Display the video screen in compact size.  Display the video in full screen mode. Press ESC to exit full screen mode.
(13) Stream	Switch to view the video stream type. The IP camera can send multiple video streams of up to 3 types. To change the video stream setting, go to System > Video Stream. **[Notes]**When streaming 2 setting in ”**Video Setting**” is closed, there won’t have other stream option
(14) Direction Controller	Move the position of the view point while in zoom mode. User has to zoom in first.

System > General

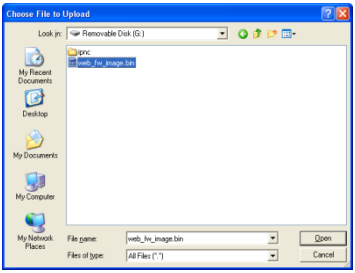
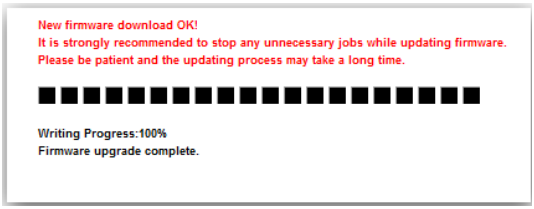
In this section, only admins are authorized to configure the IP camera system maintenance and the date and time settings.

System > General > Maintenance

In the Maintenance tab, the administrator can check the system event log, upgrade the system firmware, reset the configuration settings without having to change the user management and network settings, reboot, and restore all back to factory default settings.

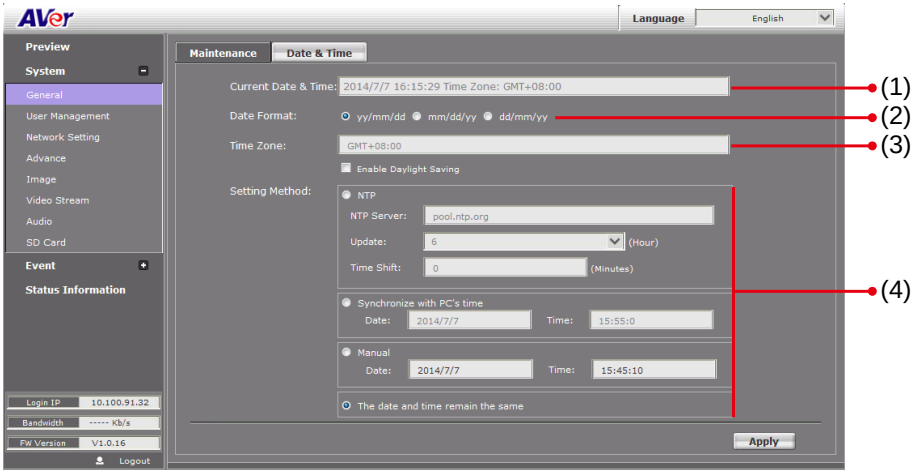


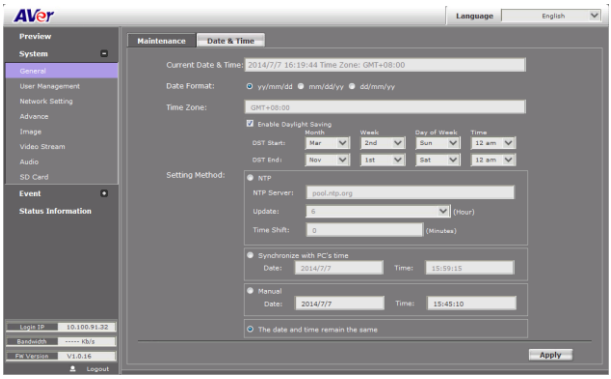
Name	Function
(1) Export Settings	Upload to save all the configuration settings from the IP camera to the computer hard disk.
(2) Reboot	Turn the IP camera off and on again.
(3) Factory default	Set all the configuration settings back to default except the user management and network settings.

Name	Function
(4) Firmware Upgrade	Upgrade the firmware to the latest version. **<u>To Upgrade the IP Camera Firmware</u>** 1. Download the file from our website and save it in your computer hard disk. 2. Click Browse. Locate and select the file and click Open. 3. Click Apply. Wait till you see the massage "Firmware Upgrade OK!". You may now click the Internet Explorer browser refresh button or press F5. The login page will appear.  
(5) Import	Download to replace the current settings with the configuration settings file from the computer hard disk to IP camera. **[Note]** If the import setting of input resolution is different from existing value, the camera will reboot automatically. For example, if the current resolution is 1280x720 but your import setting is 1280x 1024.
(6) System log	Display the IP camera system event log.

System > General > Date & Time

In the **"**Date & Time**"** tab, the administrator can set and update the system**'s** date and time. After **filling in** the **correct** setting**s**, click **Apply** to apply the new settings.



Name	Function
(1) Current Date & Time	Display the current date and time.
(2) Date Format	Select the date display format.
(3) Time Zone	Set the local time zone. Check the box next to "Enable Daylight Saving" to enable and setup the start date and end date for daylight saving time. 

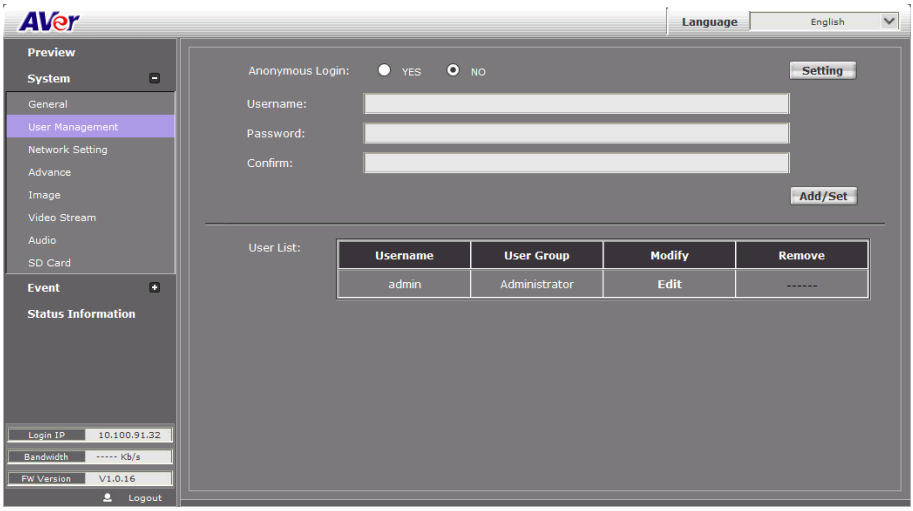
Name	Function
(4) Setting Method	Select the date & time settings method. **Sync with current PC** – Obtain the date and time setting on the current login computer. **Sync with NTP Server** – Obtain the date and time setting from NTP server. In the drop-down list, select the NTP host name. **Manual** – Manually set the date and time. Click "**Done**" to close the date and time interface.

System > User Management

In this section, only admins are authorized to create, delete, and edit the account in Account tab and configure the client connection settings in Connection tab.

System > User Management

IP camera supports two different user accounts – Administrator (Admin) and Guest User.



User Type	Access Rights
Admin	Can access all the configuration pages
Guest User	Can only access the preview and status information pages.

- **Anonymous User Login**
  - ✓ **Yes:** Allow an anonymous user to view the IP camera without logging in.
  - ✓ **No:** Need user name & password to access this IP camera

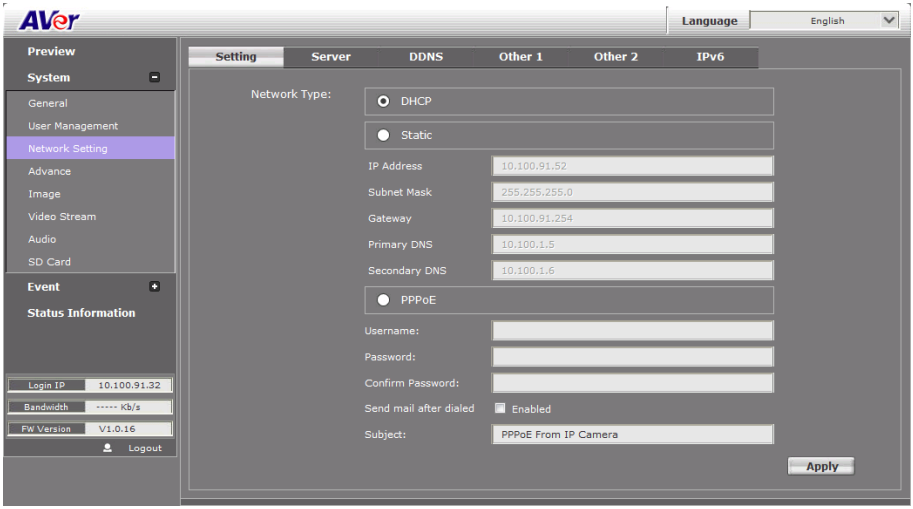
- **Add user:** Enter the user name in “**Username**”, the password in “**Password**”, and re-enter the password in “**Confirm**”. Then, click “**Add/Set**”.
- **User List:** Click **edit** to change the account password. To delete the user account, click **Remove** button.

[Note]

1. The password can’t be empty, otherwise, user are not able to login successfully.
2. Please don’t use special symbols as user name such as *, %, $, &.

System > Network Setting > Setting

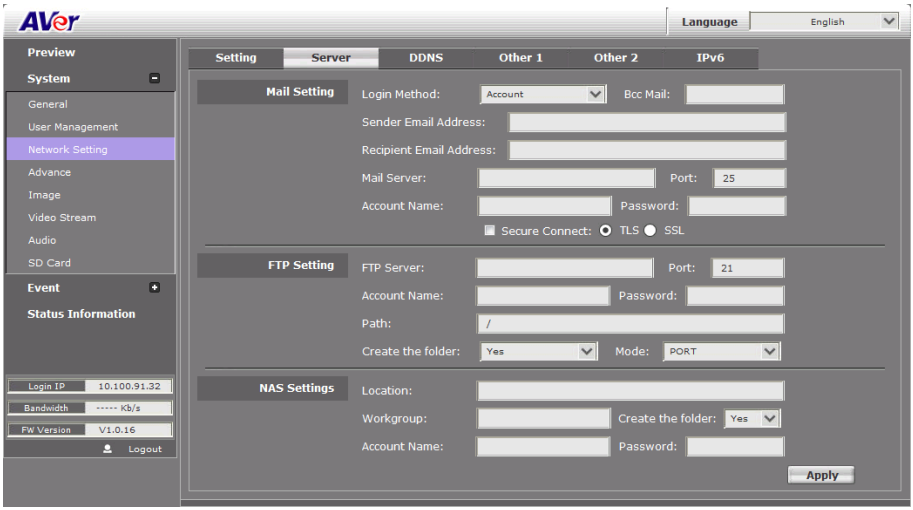
- **Device Name:** Used to name the IP camera to search more easily for a specific one among all connected IP cameras.



- **Network Type:** IP camera supports DHCP, static IP and PPPoE. After completed all settings, click **Apply** to save the configuration.
  - **DHCP:** Using DHCP, the IP camera will get all of the network parameters from the DHCP server automatically.
  - **Static:** Please enter the IP address, subnet mask, gateway, Primary DNS, and Secondary DNS.
  - **PPPoE:** Enter the **Username**, **Password** and re-enter the Password in **Confirm Password** for the ADSL connection. And then click **Apply** to save the configuration.

System > Network Setting > Sever

Used to send out the video via Email or FTP, or to save on NAS.

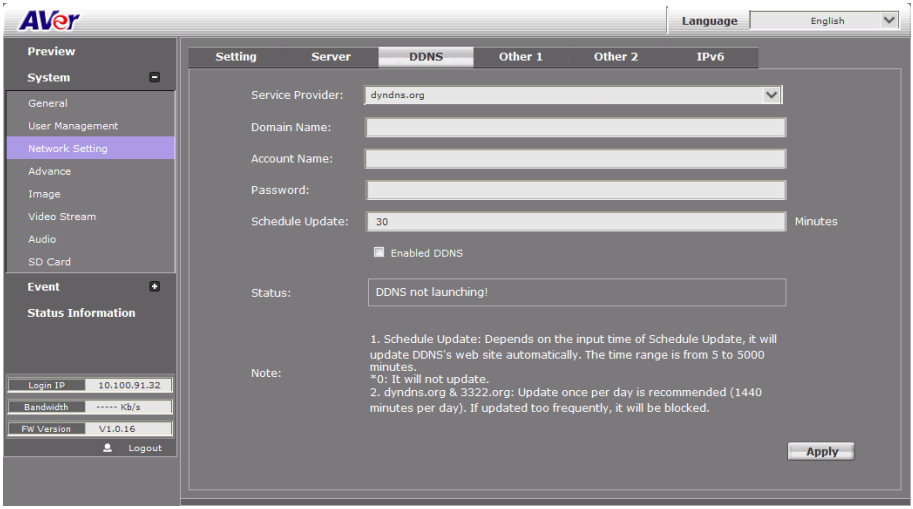


- **Mail Setting:** Used to send out the video via Email.
  a. **Login Method:** Click drop-down list to select the method to login Email server – "**Account**" or "**Anonymous**".
  b. Enter necessary information in "**Bcc Mail**", "**Sender Email Address**", "**Recipient Email Address**", "**Mail Server**", "**Mail Server Port**", "**Account Name**", and "**Password**" columns.
  c. Click "**Apply**" to save the configuration.
- **FTP Setting:** Used to send out the video to FTP server.
  a. Enter necessary information in "**FTP Server**", "**Account Name**", "**Password**", and "**Path**" columns.
  b. **Port:** Select the FTP server port.
  c. If the user wants to create a new folder on the FTP server to save the video file, select "**Yes**" under the "**Create the folder**".
  d. **Mode**: Select the FTP transmission mode.
  e. Click "**Apply**" to save the configuration.

- **NAS Settings:** Used to send out the video to NAS server.
  a. Enter necessary information in "**Location**", "**Workgroup**", "**Account Name**" and "**Password**" columns.
  b. If the user wants to create a new folder on the NAS server to save the video file, select "**Yes**" under the "**Create the folder**".
  c. Click "**Apply**" to save the configuration.

System > Network Setting > DDNS

The IP camera supports DDNS (Dynamic DNS) service.



a. Select "**Enabled DDNS**" to enable DDNS function.
b. Enter the **Domain Name**, **Account Name**, and **Password** that the user has registered on the DDNS service provider in the appropriate columns.
c. Enter the IP refreshing time period in the "**Schedule Update**" column.
d. Click "**Apply**" to save the configuration.

[Note] If you set the schedule update to occur too frequently, the IP may be blocked. In general, performing schedule update once a day (1440 minutes) is recommended.

■ **Status**

- **Common warning message:**

  Updating!
  Failed(1), Please check your DNS setting.
  Failed(2), Please check your internet connection.
  Failed(3), Please check your internet connection.
  Failed(6), receiving data failure

- **Warning message from different service provider:**

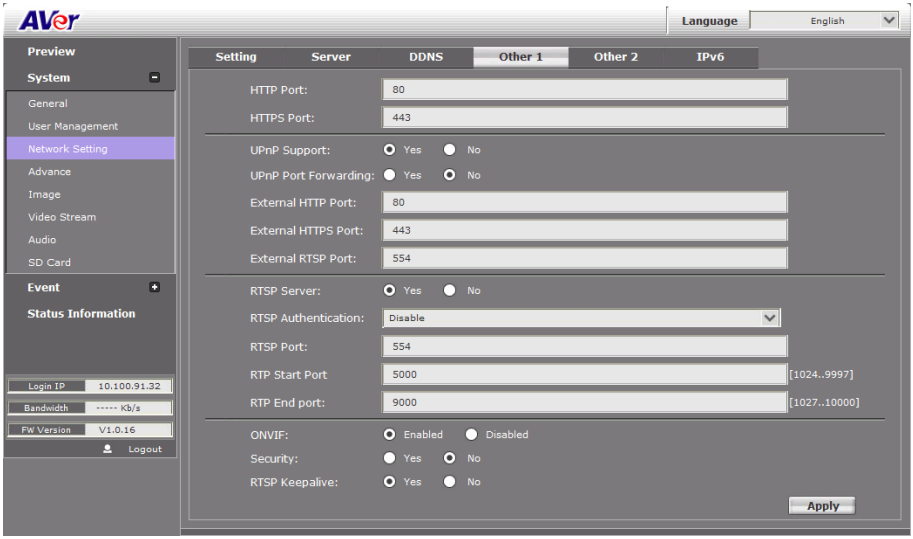
  ✧ **Server Provider : dyndns.org**
  Failed(4),Please check the Dyndns.org.
  Error : The system parameter given is not valid.
  Error : No user agent was specified.
  Error : The username and password pair do not match a real user.
  Error : An option available only to credited users was specified.
  Error : Not in the form hostname.domain.org or domain.com.
  Error : The hostname specified does not exist.
  Error : Not under the username specified.
  Error : Too many or no hosts specified in an update.
  Error : The hostname specified is blocked for update abuse.
  Error : DNS error encountered.
  Error : DNS Server Error Conditions.

  ✧ **Server Provider : ddns.camddns.com(TW)**
  Failed(5), The name has already been registered.

  ✧ **Server provider : ddns.ipddn.com(HK)**
  Failed(5), The name has already been registered

  ✧ **Server provider : www.3322.org.**
  Failed(4), Please check the www.3322.org.

System > Network Setting > Other 1



User may need to assign a different port to avoid conflict when setting up IP assignment. Click **Apply** to save the configuration.

- **HTTP Port:** setup web page connecting port and video transmitting port (Default: 80)
- **HTTPS Port:** AVer IP Camera supports encrypted browsing using HTTPS. This is configured on the System > Advance > HTTPS
- **UPnP Support:** This IP camera supports UPnP, if this service is enabled on your computer, the camera will automatically be detected and a new icon will be added to “My Network Places.”

[Note] UPnP must be enabled on your PC.

Please follow the procedure to activate UPnP.

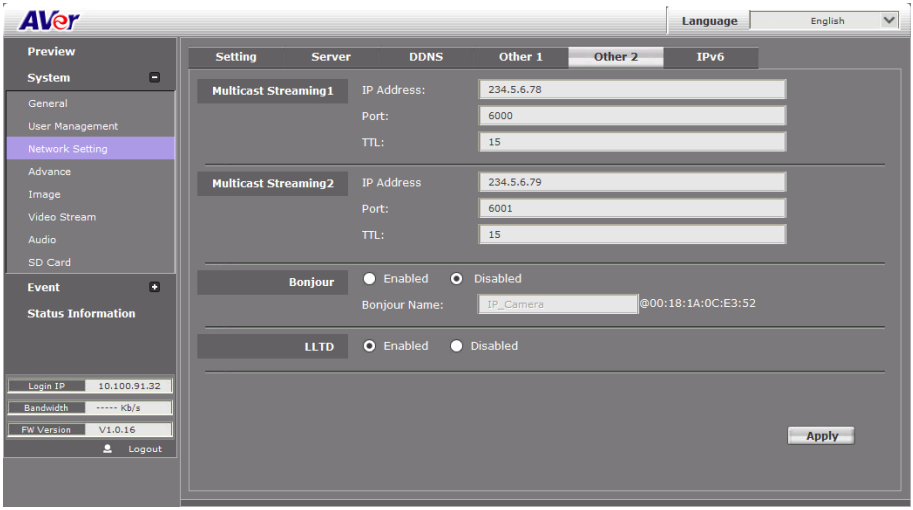
1. Open the **Control Panel** from the Start Menu.
2. Select **Add/Remove Programs**.
3. Select Add/Remove Windows Components and open Networking Services section.
4. Click **Details** and select **UPnP** to setup the service.
5. The IP device icon will be added to “**My Network Places**”.
6. User may double click the IP device icon to access IE browser.

- **UPnP Port Forwarding:** If the IP camera is set up behind the firewall, please select YES to enable it.
- **RTSP Server:** Enable/disable RTSP function. The Real Time Streaming Protocol (RTSP) is a network control protocol designed for use in entertainment and communications systems to control streaming media servers.
- **RTSP Authentication:** While using iViewer software to get camera’s image, please choose “Basic” (base64) mode to enable security mechanism.

- **RTSP Port:** setup port for RTSP transmitting (Default: 554)
- **RTP Start and End Port:** in RTSP mode, you may use TCP and UDP for connecting. TCP connection uses RTSP Port (554). UDP connection uses RTP Start and End Port.
- **Security: Yes** is required account and password to connect with this IP camera through ONVIF protocol. **No** is not required account and password to connect.
- **RTSP Keepalive:** To keep connection until remote site disconnects it.

System > Network Setting > Other 2

Multicast Setting (based on the RTSP Server): User can setup two streams based on the RTSP Server.



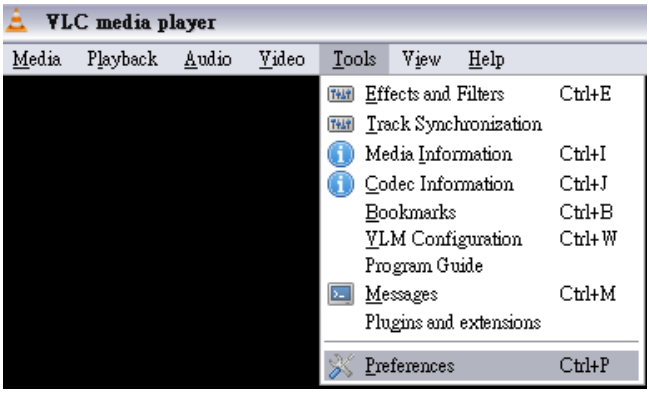
Multicast operation example:

The application is to get the multicast streaming in the LAN environment. Basically, the users operate VLC player, and then you can get the multicast streaming from IP camera.

Please follow the steps to obtain the multicast streaming in the following steps:

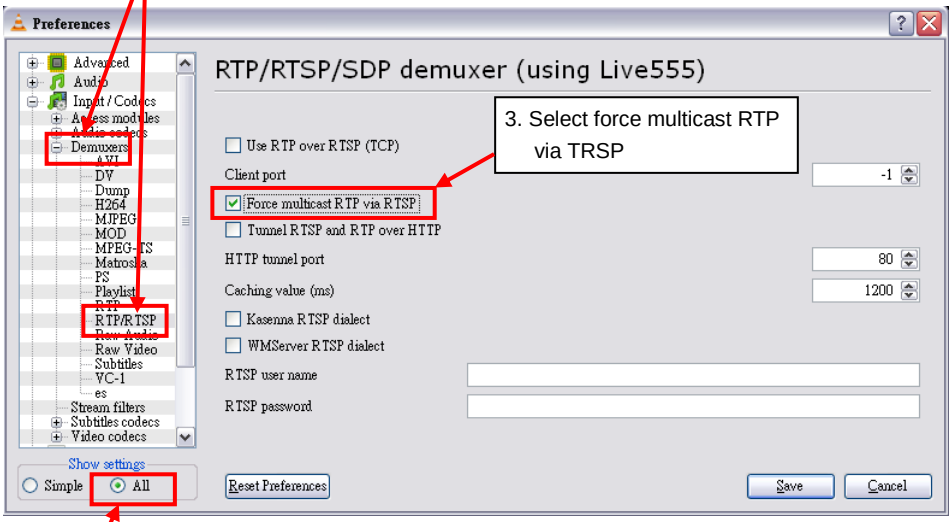
Step 1:

1. Implement VLC player (please download from the Internet)
2. Select /tools/preferences



Step 2:

2. Select Demuxers and RTP/RTSP

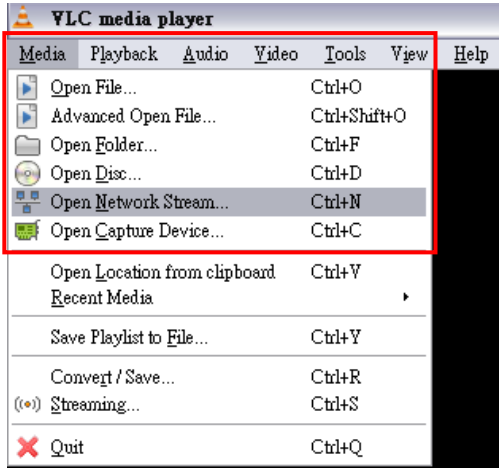


3. Select force multicast RTP via TRSP

1. Select all

Step 3:

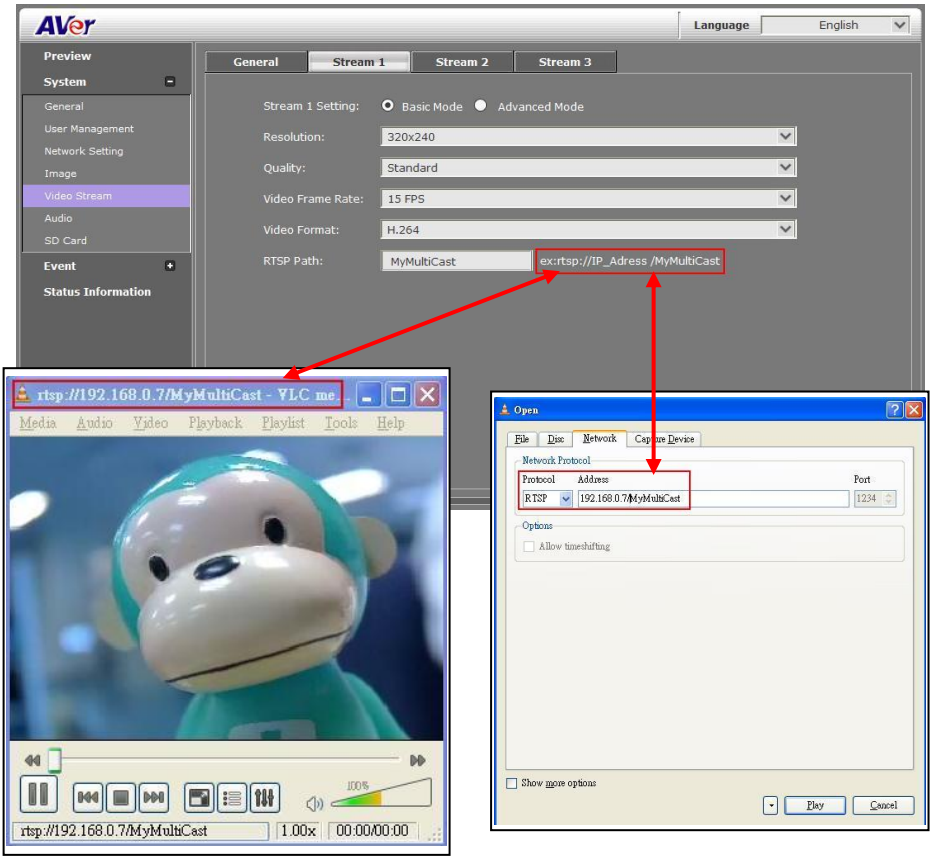
Select Media/open network stream



Step 4:

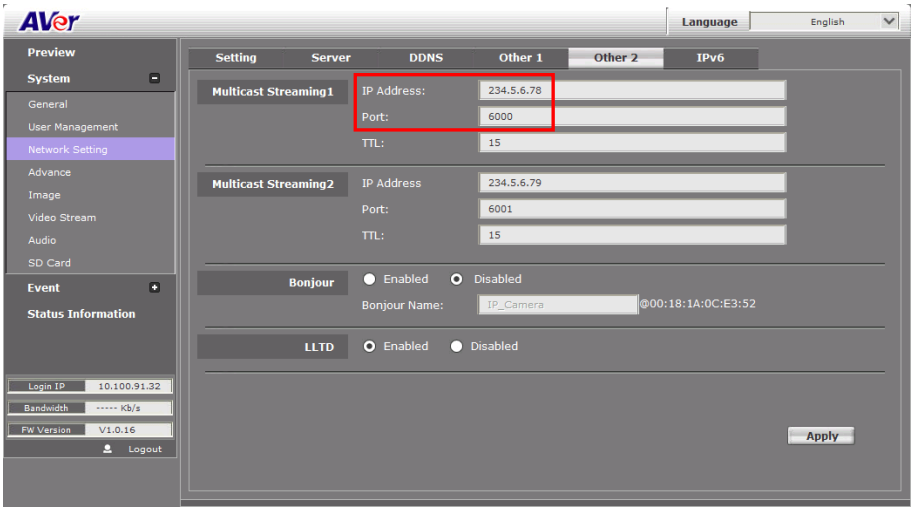
Input **rtsp://[IPCAM Address] / [RTSP Path]**

The URL address should be the same as the RTSP path in Video Stream (System-->Video Stream)

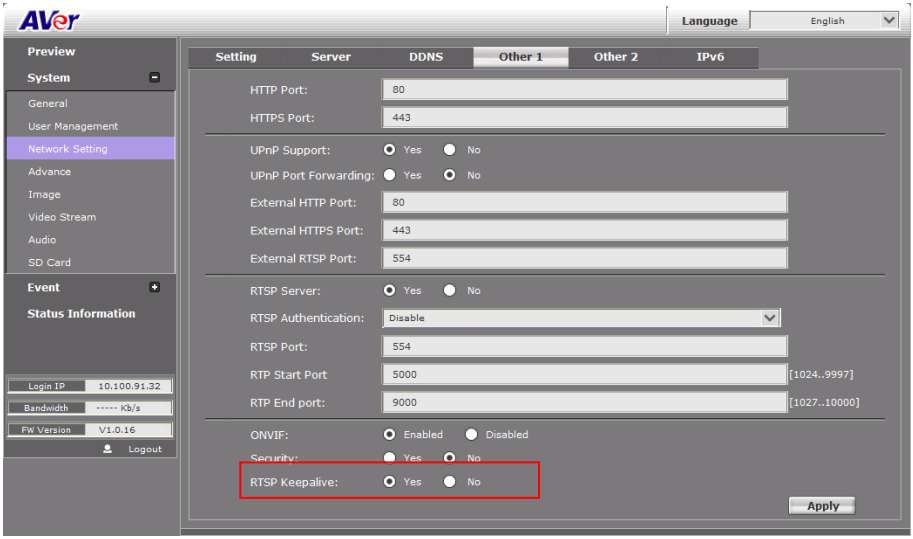


[Notice]

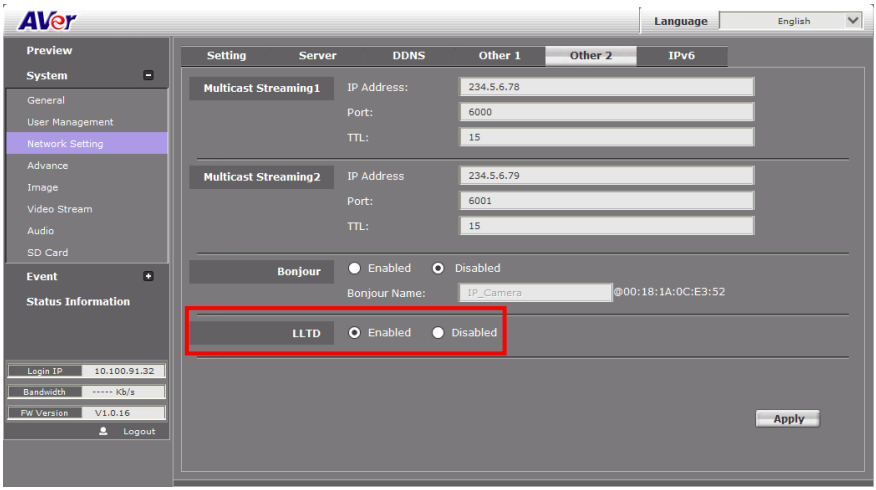
a. If the received image is not from the required IP camera, please adjust the value. (Change either IP Address or Port number)



b. If the Multicast stream you use doesn't support RTSP Keepalive, please select NO.

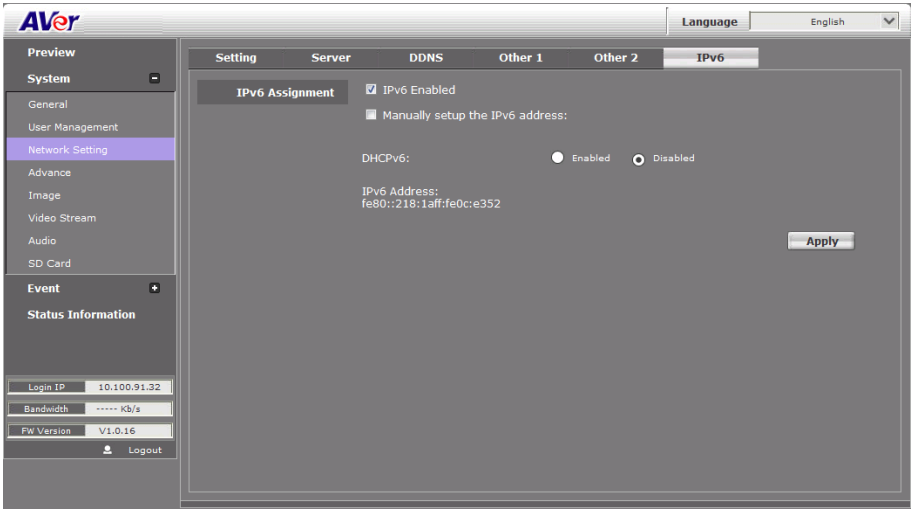


- **Bonjour:** This function enables MAC systems to link to this IP Camera. Please key in the name here.(Safari supports Bonjour protocol.)
- **LLTD:** If your PC supports LLTD, enable this function then you can check the connection status, properties, and device position (like IP address) of this IP Camera in the network map. On computer's running Windows Vista or Windows 7, you can find LLTD through the path **Start → Control Panel→ Network and internet→ Network and Sharing Center→** Click " **See full map**".

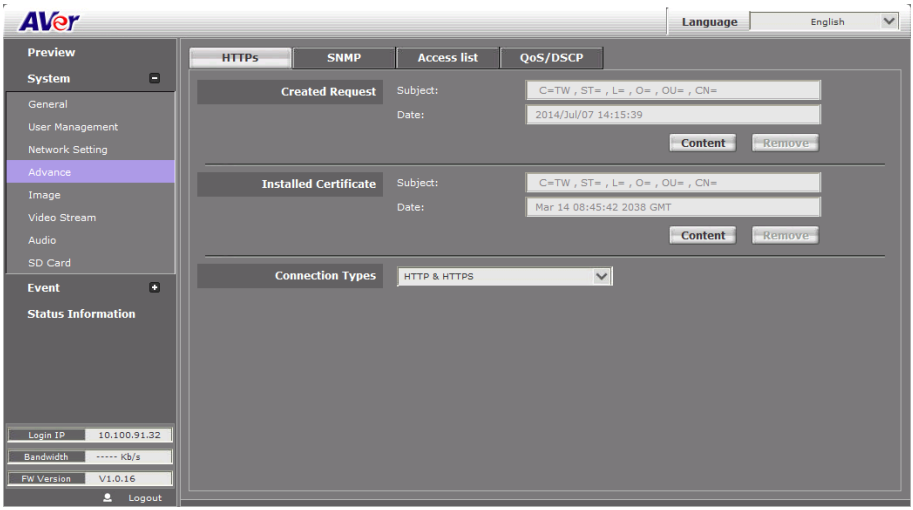


System > Network Setting > IPv6

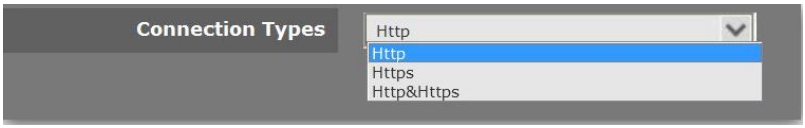
Besides IPv4, there is IPv6 for user to set up IP address.



System > Advance > HTTPS

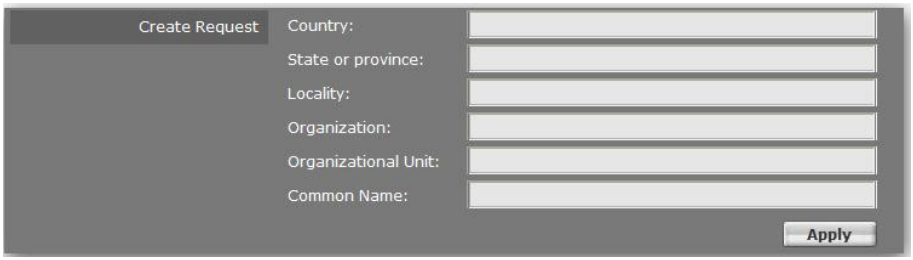


HTTPS (Hypertext Transfer Protocol Secure): Https can help protect streaming data transmission over the internal on the higher security level. You can select the connection type. "Https" means the user cannot connect the camera via Http protocol. The HTTPS path will be: "https ://(IP address)/". If you select "Http & Https", both the Http and HTTPS path can be used to access the camera



Remove the existing setting: Before setting new request, please remove old secure identification. Select "Http" connection type and click "Remove".

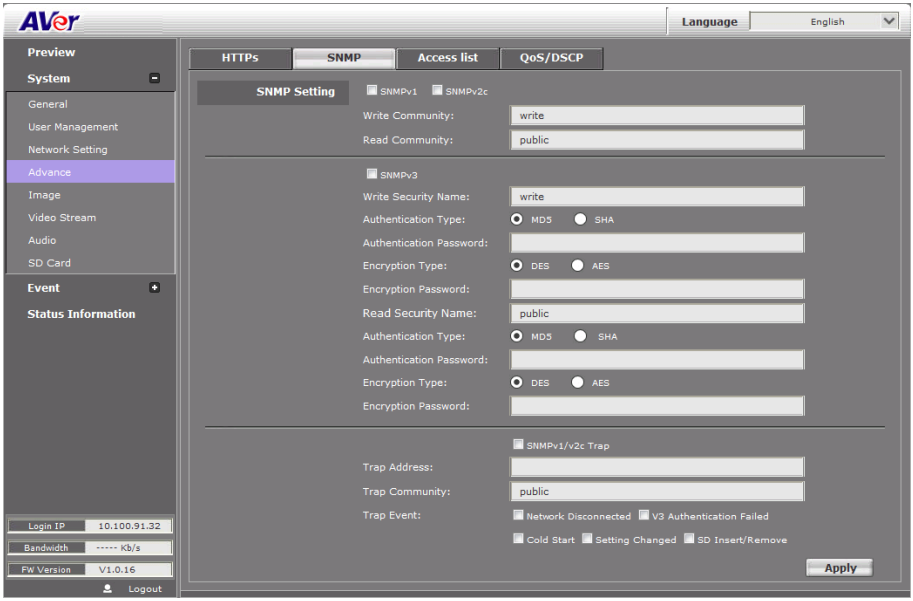
Created Request: Setting the secure identification and apply it.



There are two ways to set Certificate- Install Signed Certificate or Create Self-Signed Certificate.

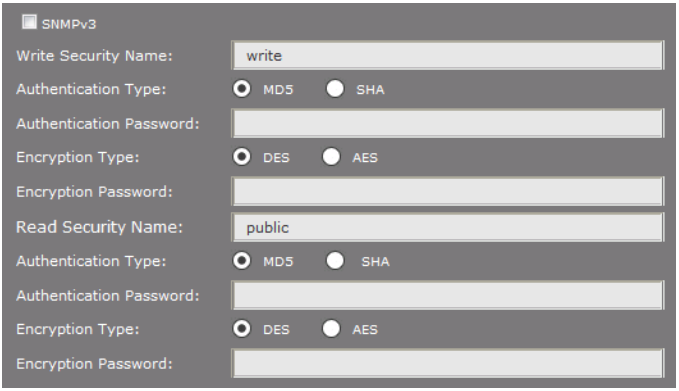
System > Advance > SNMP

SNMP (Simple Network Management Protocol) provides a simple framework for administering networked hardware. To manage the IP camera, you have to prepare a MIB browser or similar tools first. SNMPv1, SNMPv2c, and SNMPv3 can be enabled simultaneously.

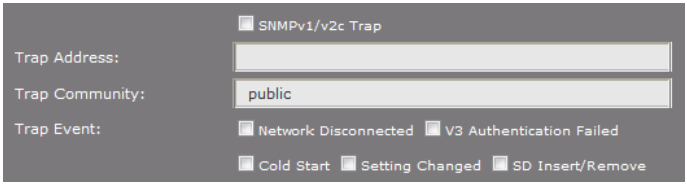


- **SNMPv1 and SNMPv2:** The term "Community name" in SNMPv1 and SNMPv2c can be roughly regarded as key. The person who has the community name has the authority to read or edit the information of IP camera via SNMP. Check the box to enable SNMPv1 or SNMPv2c protocol, and specify the community name for write (read and write) and read (read-only). The user who uses read community name to access the IP camera cannot modify any data of this camera.

- **SNMPv3:** For data security reasons, the authentication and encryption assurances are added when developing SNMPv3. The user has to give not only the security name (the same as "community name" in v1&v2c, or sometimes we call it "context name") but the password in order to access the IP camera. Please set security name, authentication type, authentication password, encryption type, encryption password of write and read respectively. The password must be 8~64 bits in length. Different from in SNMPv1 and v2c, the user have to create an account when using SNMPv3. In the account parameters, key in the security name and password you set in the camera to get accessing.

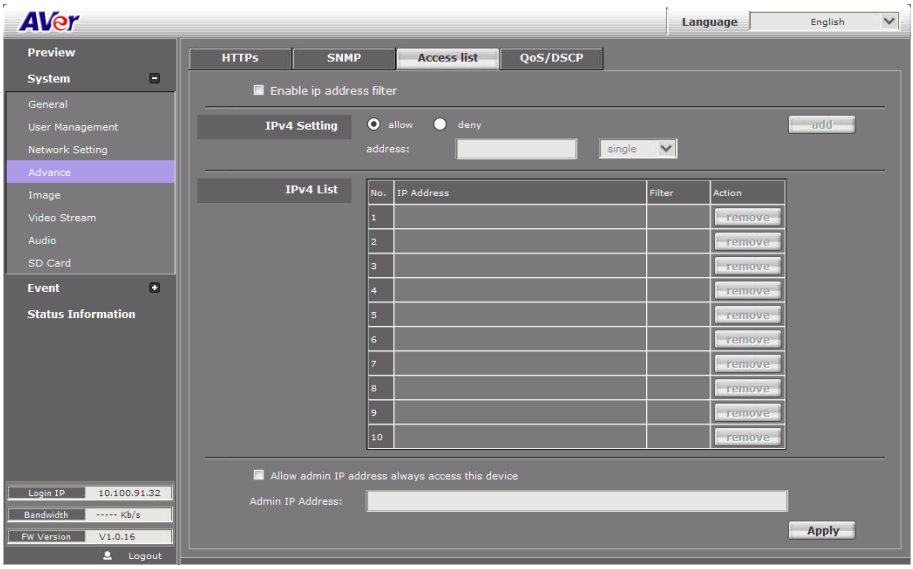


- **SNMPv1/v2cTrap:** Trap is a mechanism that allows the managed device to send messages to the manager instead of waiting passively for polling from the manager. Specify the trap event. When those events happen, the camera will send the ring message to the Trap Address, which is usually the manager's IP address. Trap Community means the community that can receive the trap message.
  - **Cold Start:** The camera starts up or reboots.
  - **Setting changed:** The SNMP setting is changed.
  - **Network Disconnected:** The network connection was broken down. (The camera will send trap messages after the network being connected again)
- **V3 Authentication Failed:** A SNMPv3 user account tries to get authentication but failed. (Due to incorrect password or community)
- **SD Insert / Remove:** A microSD/SDHC card is inserted or removed.



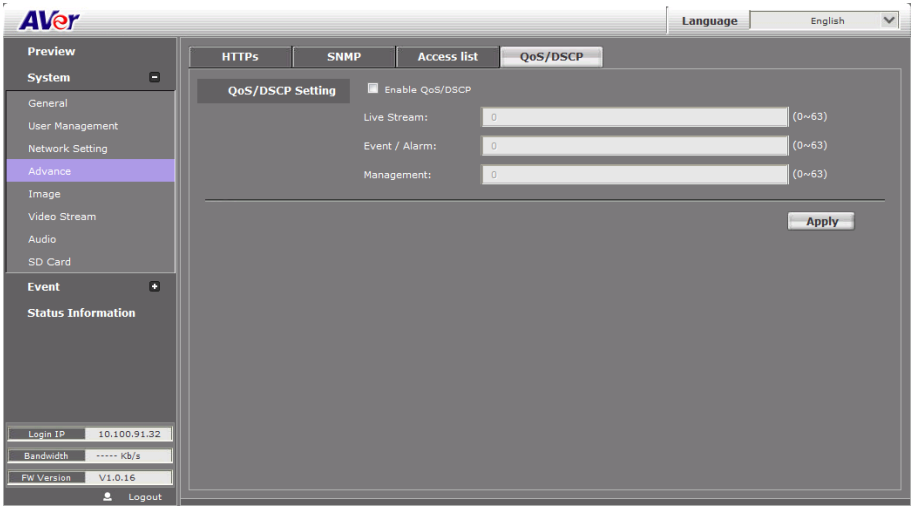
System > Advance > Access list

You can deny an IP address or a range of IP addresses so that they cannot access the IP camera. Tick the "enable" box, key in the IP address you want to deny, select" deny" then click "Add" to add it to the list. You can also choose to deny a range of IP address but allow one or several IP addresses of them. Take the picture above for example, IP address192.168.50.151~161 is not allowed to connect to the camera, but only 192.168.50.159 can access. Note: In the list "allow" condition must be ranked before "deny" condition. For example, if we exchange the sequence, set "Deny: 192.168.50.151 ~ 192.168.50.161" for the first item and "Allow: 192.168.50.159" for the second item in the list, the IP "192.168.50.159" turns out to be denied by the camera because the "deny" condition has the priority according to our ranking way.



System > Advance > QoS/DSCP

QoS/DSCP (Quality of Server/Differentiated Services Code-point) specifies a simple mechanism for classifying and managing network traffic and provides QoS on IP networks. DSCP is a 6-bit in the IP header for packet classification purposes. The number 0~63 for Live Stream, Event / Alarm, and Management represent the ratio that the bandwidth is divided. For example, if you set 5, 10, and 20 for the three items, then the bandwidth of the three items are 5:10:20. There is no difference between setting "0, 0, 0" or "63, 63, 63" because under these two settings the three items will get equal bandwidth (1/3).



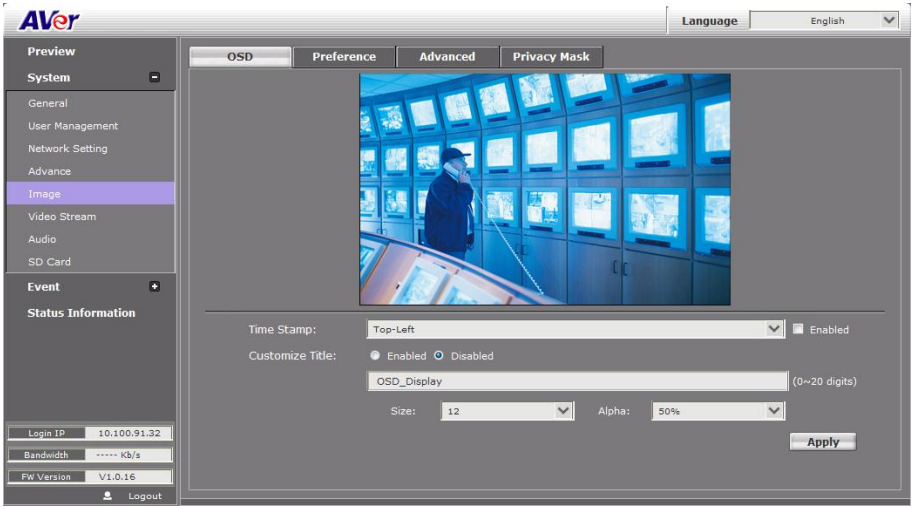
System > Image

Admin and operator levels can adjust the Image setting. There are 4 tabs: OSD, Preference, Advanced, and Privacy Mask

System > Image> OSD

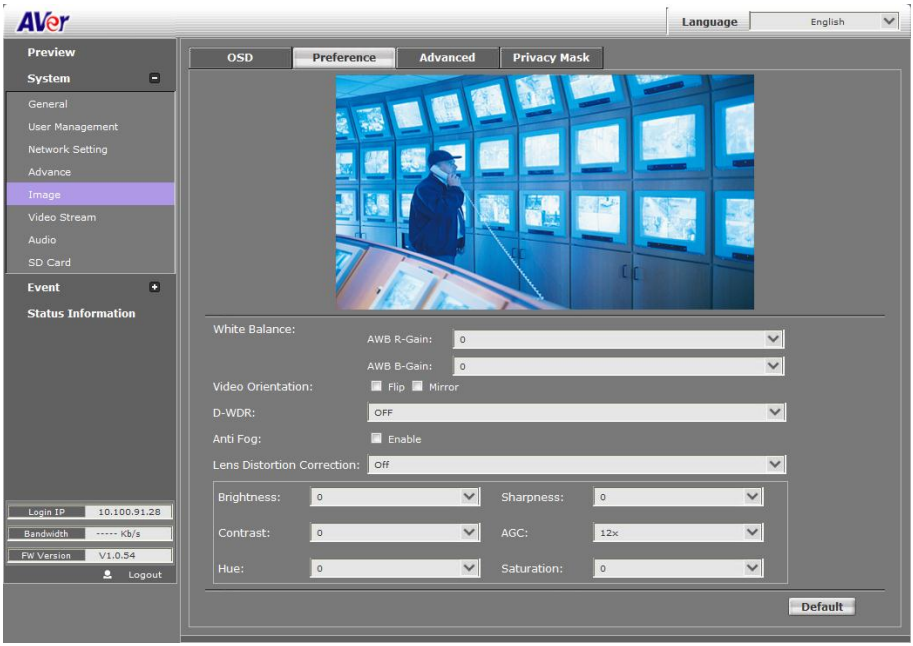
In the OSD tab, you can enable/disable overlaying time stamp and text title. After completing the setting, click Save to apply the new setting and Cancel to keep the new setting. P**lease note it can't use Chinese words.**

- **Time Stamp:** Mark **Enable** check box and select a position where date and time stamp / text to display on video screen.
- **Customize Title:** Click **Enabled** can adjust the OSD contents which are including **Size** and **Alpha** of text, the special characters(ex: &, %, #) are not allowed.



System > Image > Preference

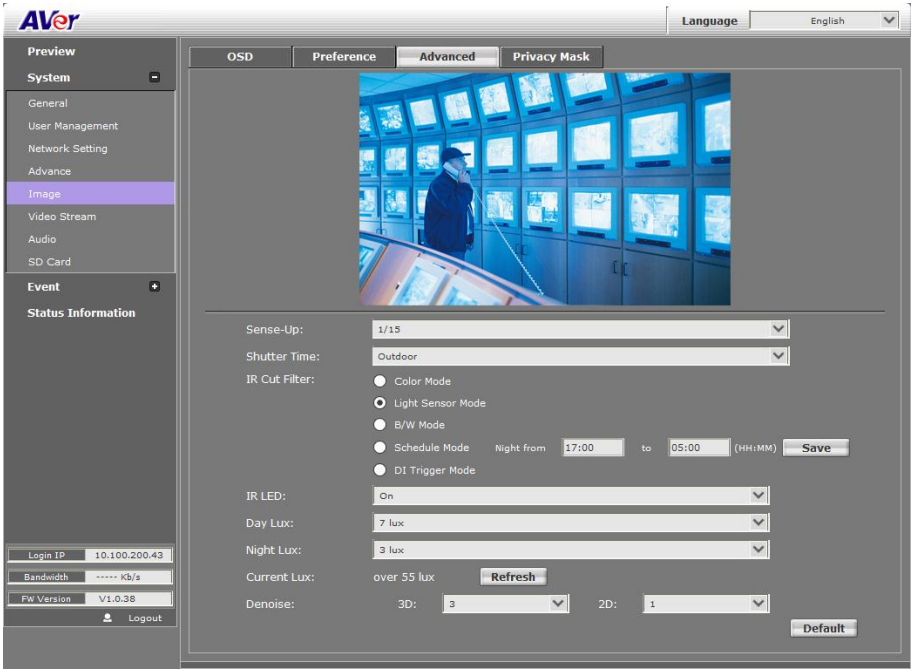
In the Preference tab, you can tune the IP camera's white balance, change the video orientation, and adjust the brightness and contrast.



- **White Balance:** Adjust white balance value.
- **Video Orientation:** To **Flip** or **Mirror** the video on screen.
- **D-WDR:** This function is able to reduce the contrast in the view to avoid the dark zones resulting from over and under exposure.
- **Anti Fog:** Improve the image clarity on environments presenting high levels of fog or smoke.
- Adjust "**Brightness**", "**Contrast**", "**Hue**", "**Saturation**", "**AGC", "Saturation"** to get clear video.
- **Default:** Click it to reset to factory default values.

System > Image> Advanced

Click **Default** button will back to factory default settings.



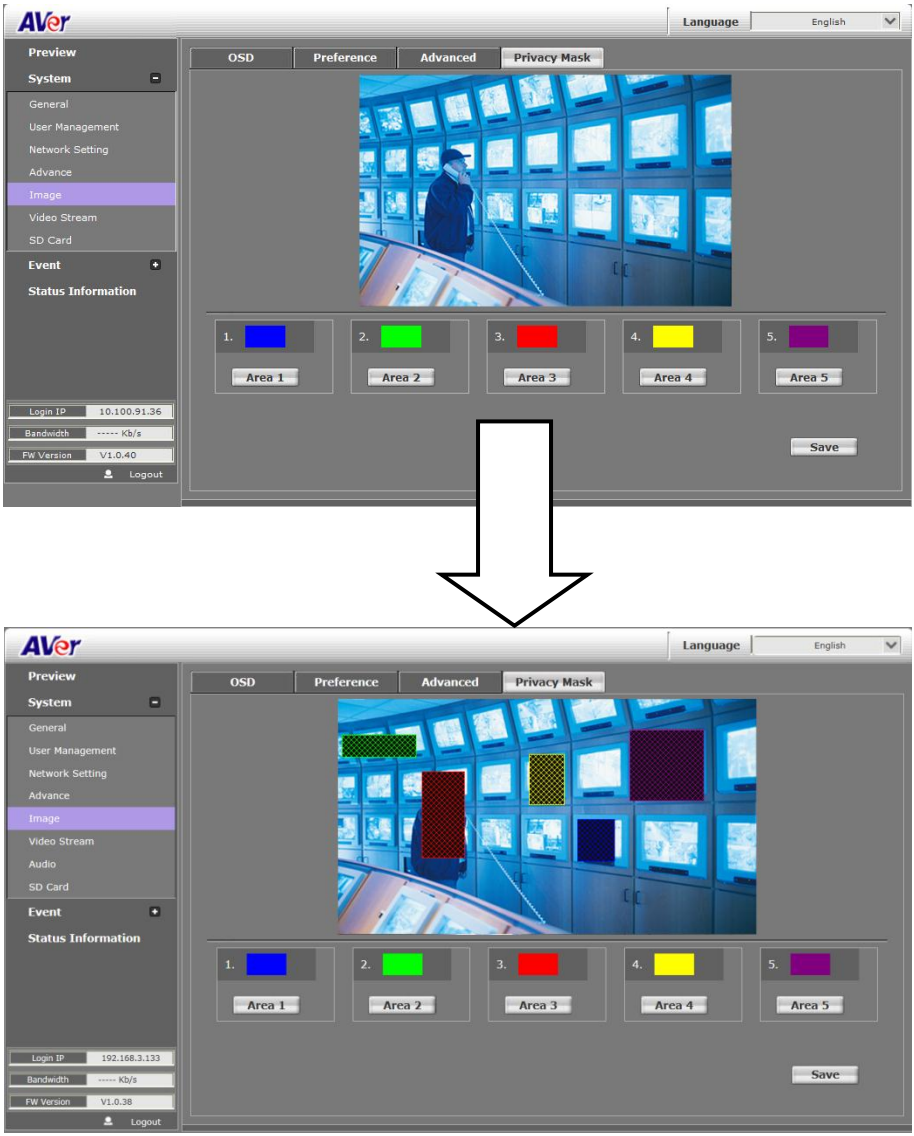
- **Sense-UP:** The main purpose of sense-up is to provide a camera technology that does not rely on artificial light to see in very low light conditions. By allowing the shutter to stay open longer, allowing more light into the camera and seeing better in low light. This setting altogether when there is a moving object in the image and the faster the object moves, the worse the image appears (blurriness).
- **Shutter Time:** Adjust the shutter time level to get the best image quality.
- **IR Cut Filter**: Select the IR cut filter mode – Color Mode, Light Sensor Mode, B/W Mode, Schedule Mode, or DI Trigger Mode. When you choose "Light Sensor Mode", the image will be turned to black and white at night in order to keep clear. Current lux value is provided for reference. Under "Times Mode" the switch time of Color / Black and white is according to the given time. You can also control it by choosing "Color" or "B/W".
- **IR LED:** select off to turn off IR LED.
- **Day Lux/ Night Lux:** To set light sensor mode, appoint a lux standard of switching D/N here.
- **Denoise**: This function is able to filter the noise and blur from the image and show a clearer view.

[Note] When you select a number in "Shutter Time", actually the shutter time varies in a range and controlled by camera automatically. Following table shows the shutter time option and corresponding range

Option	Shutter Time Range (sec.)
Outdoor	Selected number in "Sense-up"
1/10	1/24000 ~ 1/10
1/15	1/24000 ~ 1/15
1/30	1/24000 ~ 1/30
Indoor	Selected number in "Sense-up"
1/30	1/24000 ~ 1/30
1/50	1/24000 ~ 1/50
1/60	1/24000 ~ 1/60
1/100	1/24000 ~ 1/100
1/125	1/24000~ 1/125
1/250	1/24000 ~ 1/250
1/500	1/24000 ~ 1/500
1/1000	1/24000 ~ 1/1000

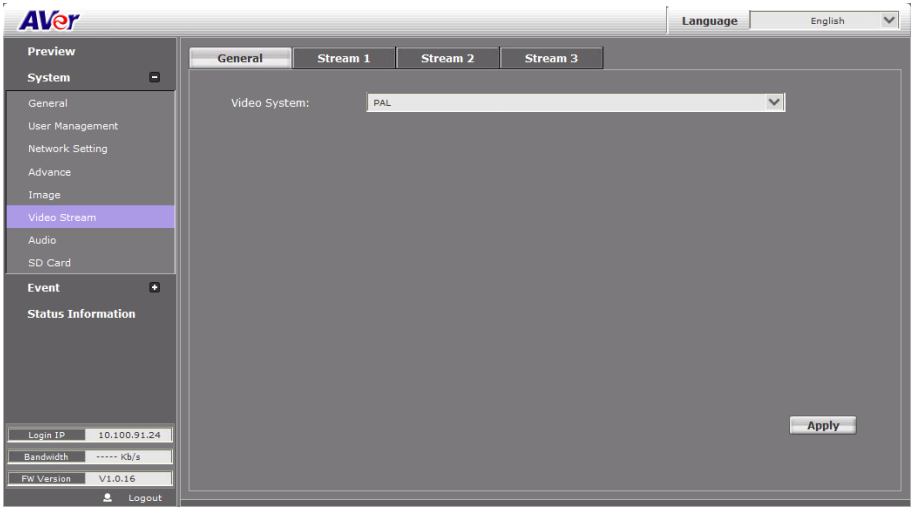
■ System > Image> Privacy Mask

For the security purpose, there are three areas can be setup for privacy mask. Click Area # (Area 1, Area 2, Area 3, Area 4, Area 5) button first and drag an area on the image screen. Then, click **Save** to save the setting.



System > Video Stream > General

- **Video System:** PAL or NTSC.

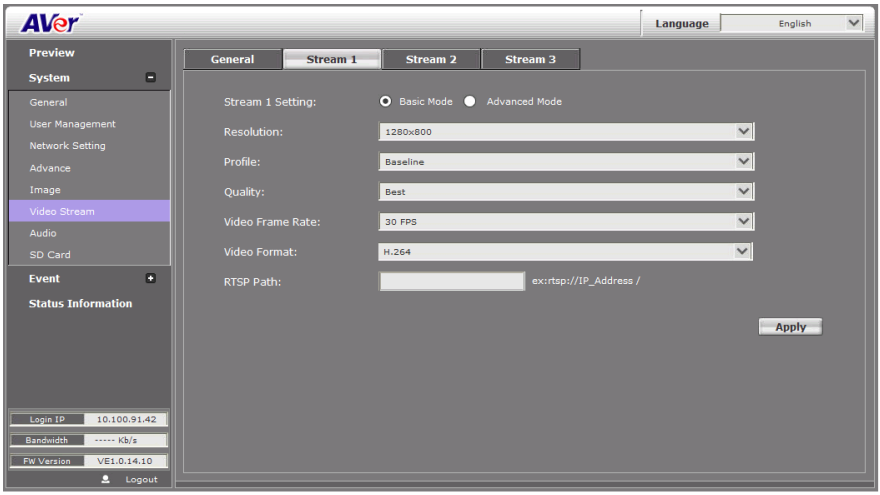


System > Video Stream > Stream1

- **Basic Mode**

  Click **Apply** to save the configuration.

  - **Resolution:** There are 6 resolutions that can be chosen –1280x800, 1280x720, 800x600, 640x480, 320x240, 176x144.
  - **Profile:** Chose between Main and Baseline.
  - **Quality:** There are 5 levels to adjust – Best, High, Standard, Medium, and Low. The higher the quality is, the bigger the file size is. Also not good for transmitting over the Internet.
  - **Video Frame Rate:** The video refreshing rate per second.
  - **Video Format:** H.264 or JPEG.
  - **RTSP Path:** It's a URL address.

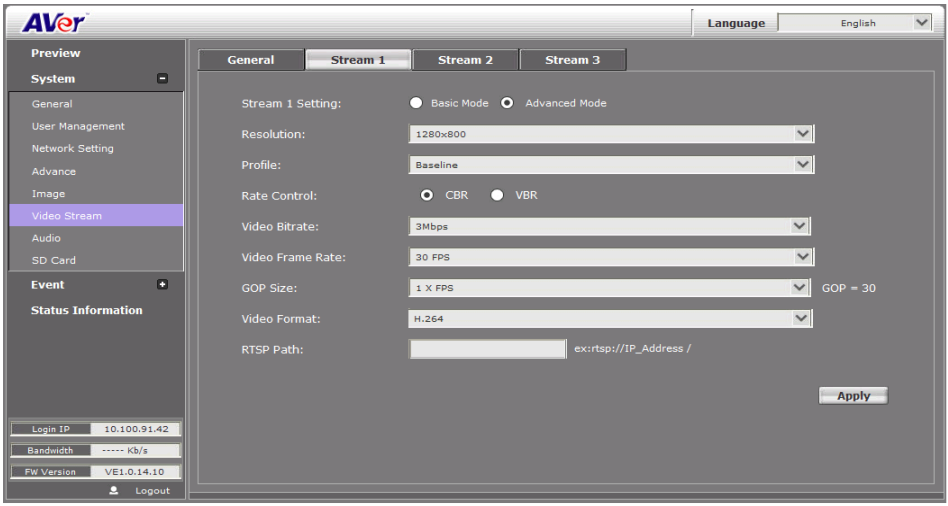


- **Advanced Mode**

  Click **Apply** to save the configuration.

  - **Resolution:** There are 6 resolutions that can be chosen –1280x800, 1280x720, 800x600, 640x480, 320x240, 176x144.
  - **Profile:** Chose between Main and Baseline.
  - **Rate Control:** There are CBR (Constant Bit Rate) and VBR (Variable Bit Rate) to use.
    - ✓ **CBR:** 32Kbps~8Mbps (the higher the CBR is, the better the video quality is).
    - ✓ **VBR:** 1(Low) ~10(High) – Compression rate, the higher the compression rate, the better the picture quality is. The balance between VBR and network bandwidth will affect picture quality. Please carefully select the VBR rate to avoid picture breaking up or lagging.

- **Video Quantitative:**1(Low) ~10(High).When you select VBR setting, you can adjust the value.
- **Video Frame Rate:** The video refreshing rate per second.
- **GOP Size:** It means "**Group of Pictures**".
- **Video Format:** H.264 or JPEG
- **RTSP Path:** It's a URL address

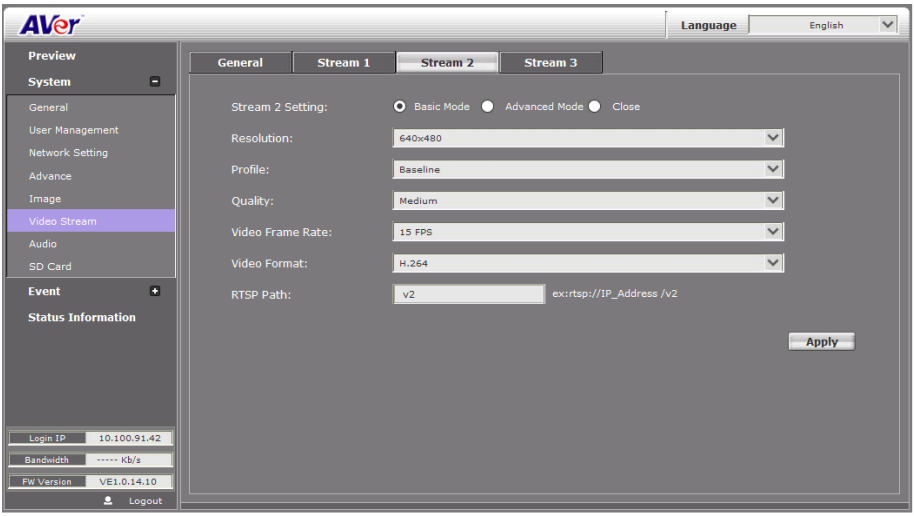


System > Video Stream > Stream2

■ Basic Mode

Click **Apply** to save the configuration.

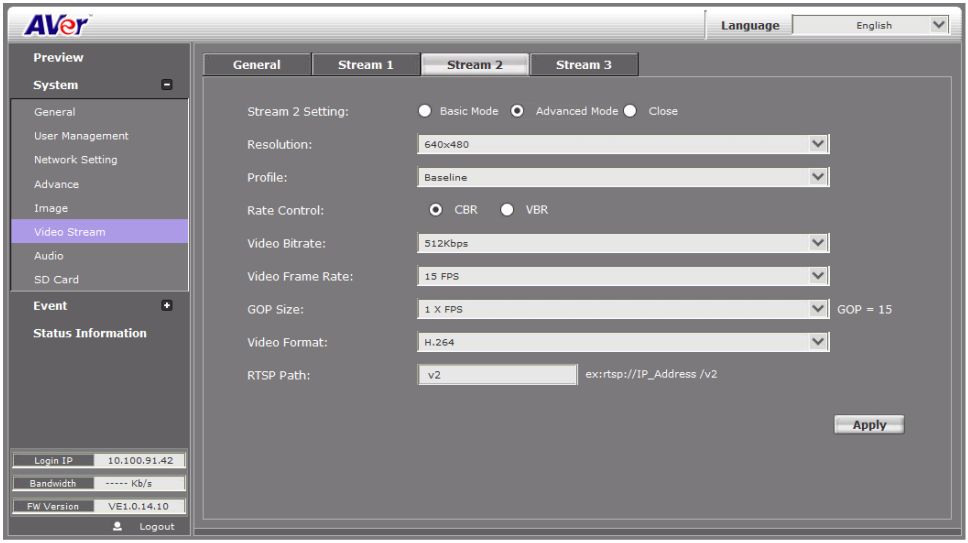
- **Resolution:** There are 6 resolutions that can be chosen –1280x800, 1280x720, 800x600, 640x480, 320x240, 176x144.
- **Profile:** Chose between Main and Baseline.
- **Quality:** There are 5 levels to adjust – Best, High. Standard, Medium, and Low. The higher the quality is, the bigger the file size is. Also not good for transmitting over the Internet
- **Video Frame Rate:** The video refreshing rate per second.
- **Video Format:** H.264 or JPEG
- **RTSP Path:** It's a URL address



■ **Advanced Mode**

Click **Apply** to save the configuration.

- **Resolution:** There are 6 resolutions that can be chosen – 1280x800, 1280x720, 800x600, 640x480, 320x240, 176x144.
- **Profile:** Chose between Main and Baseline.
- **Quality:** There are 5 levels to adjust – Best, High. Standard, Medium, and Low. The higher the quality is, the bigger the file size is. Also not good for transmitting over the Internet
- **Rate Control:** There are CBR (Constant Bit Rate) and VBR (Variable Bit Rate) to use.
  - ✓ **CBR:** 32Kbps~8Mbps (the higher the CBR is, the better the video quality is).
  - ✓ **VBR:** 1(Low) ~10(High) – Compression rate, the higher the compression rate, the better the picture quality is. The balance between VBR and network bandwidth will affect picture quality. Please carefully select the VBR rate to avoid picture breaking up or lagging.
- **Video Quantitative:** 1(Low) ~10(High).When you select VBR setting, you can adjust the value.
- **Video Frame Rate:** The video refreshing rate per second.
- **GOP Size:** It means "**Group of Pictures**".
- **Video Format:** H.264 or JPEG.
- **RTSP Path:** It's a URL address

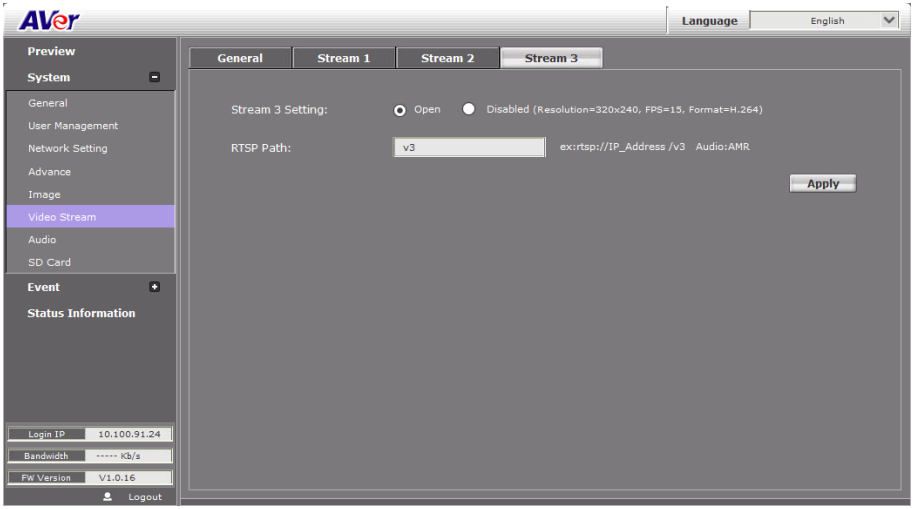


■ **Close:** To close stream 2. Click **Apply** to save the configuration.

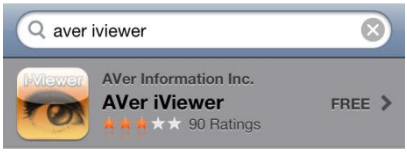
System > Video Stream > Stream3

3GPP Streaming is designed for mobile viewing.

- **Stream 3 Setting: Enable** or **Disable** 3GPP Streaming.
- **RTSP Path:** It's a URL address.

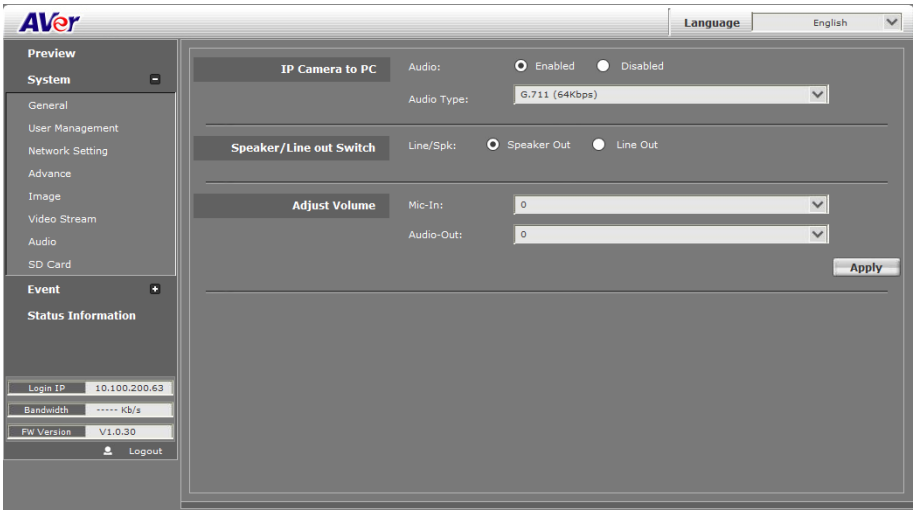


[Note] To get the best mobile viewing quality, please download AVeriViewer (AndroidViewer) from the Apple App store or Google Play. iViewer takes video from Stream 1 or Stream 2, not from 3GPP streaming.



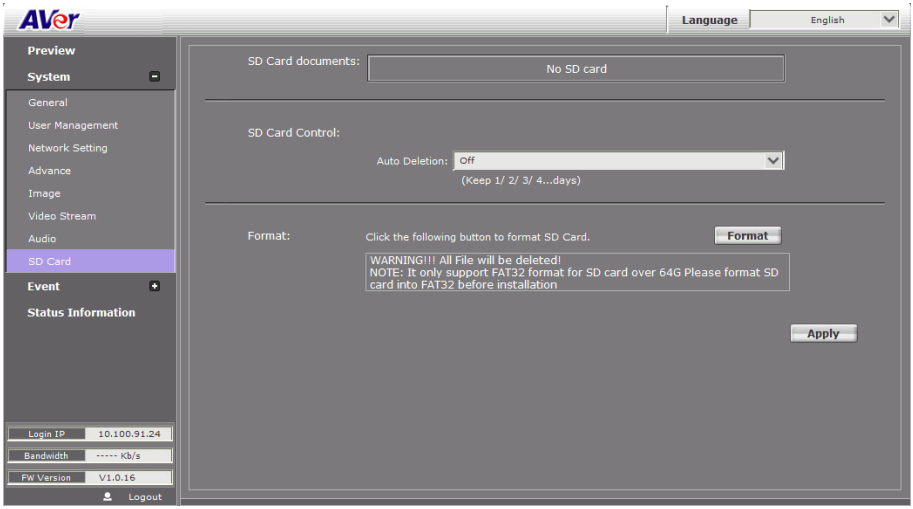
System > Audio

IP camera supports 2-way audio (mono). User can send audio from IP camera while connected to a microphone to remote site; User can also send audio from remote site to IP camera's external speaker.



a. IP camera to PC: select "**Enable**" to start this function.
b. There are three audio codes: G.711 (64Kbps), G.726(24Kbps), G.726 (32Kbps)
c. **Speaker Out:** The audio sound will come out from IP camera.
d. **Line Out:** The audio sound will come out from the audio device that you have connected on IP camera. If the audio device is not connected, the audio sound still will come out from IP camera.
e. In live video screen, click  button to start chatting. Press again to mute. Click  button to turn on or off the speaker of PC.

System > SD Card

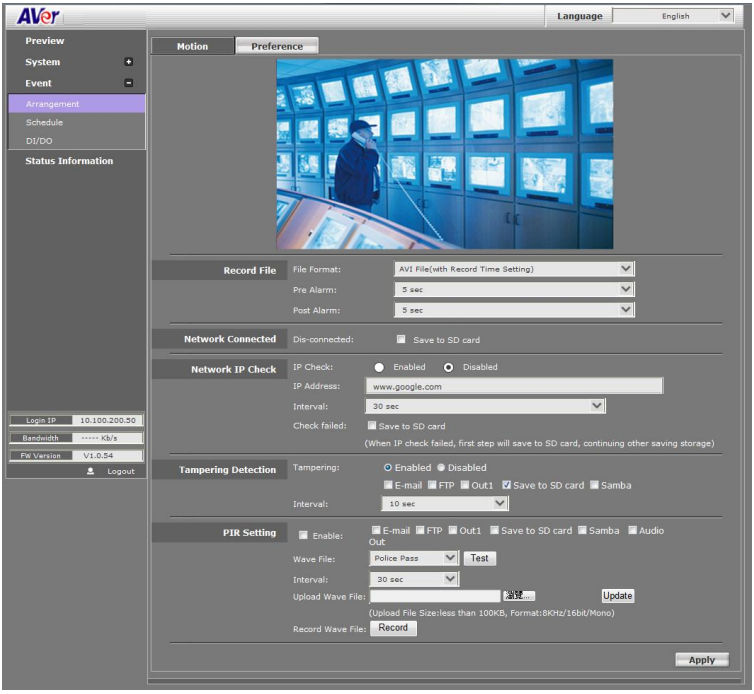


Please insert microSD/SDHC card before use. Make sure to push microSD/SDHC card into the slot completely.

Event > Arrangement > Motion

Motion Detection: IP camera allows 3 areas of motion detection. When motion is triggered, it can send the video to some specific mail addresses, transmit the video to remote ftp server, trigger the relay, and save video to local SD/SDHC card. To set up the motion area 1, click "**Area 1**" button. Using mouse to drag and draw the area. The same operation for area 2 and 3. (The higher the sensitivity value is, the more sensitive to trigger event.)

Event > Arrangement > Preference



- **Record File:**
  - **File Format:** IP camera allows 3 different types of recording file to change its recording size. When motion/alarm is triggered, there are 3 different types of record mode.
    - AVI File (With Record File Setting)
    - JPEG Files (With Record File Setting), only with MJPEG compression format.
    - Single JPEG (Single File with Interval Setting) (JPEG photo).
  - **Pre** Alarm **and Post Alarm:** Setups for video start and end time when motion detected, I/O, or other devices got triggered.

  [Note] Pre/Post Alarm record time is based on record time setting and IP camera built-in Ram memory. Limited by IP camera built-in Ram Memory. When information is too much or video quality set too high, it will cause recording frame drop or decrease on post alarm recording time.
- **Network Connected:** When the network is down, it will save the video to local SD/SDHC card.

  [Note]This function is only enabled in wire connection.

- **Network IP check:** When the connection is down, it records the **video** to SD/SDHC card. Make sure the video recording is continuous. To use this function, key in the IP address of the PC which has recording software installed. Enable the function of "**Save to SD card**", then click "**Apply**".
- **Tampering Detection:** When the camera view is covered, moved, hit by strong light, or out of focus, the tampering detection will be triggered, and send snapshot or video to mail/FTP/Samba/SD card, or trigger the external alarm.
  For example:

Before Tampering Detection

Tampering Triggered (Defocused)

Before Tampering Detection

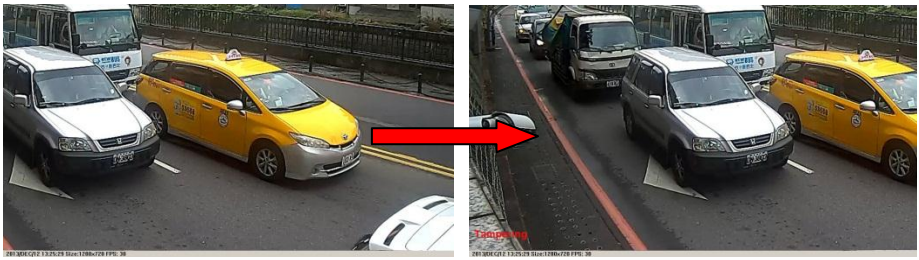
Tampering Triggered (Lens Covered)

Before Tampering Detection

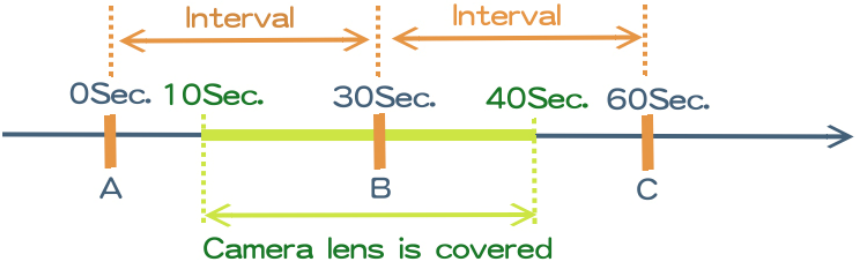
Tampering Triggered (Glare)

Before Tampering Detection

Tampering Triggered (Camera Moved)



➢ **Interval:** The tampering detecting interval. Take the diagram below as example. The interval is set for 30 second; the camera lens is covered during 10 - 40 sec. At time point B, the camera compares the view with time point A, and sends an alarm when it founds that the lens is covered. At time point C, the camera compares the view with time point B, and sends an alarm when it founds that the lens is uncovered.



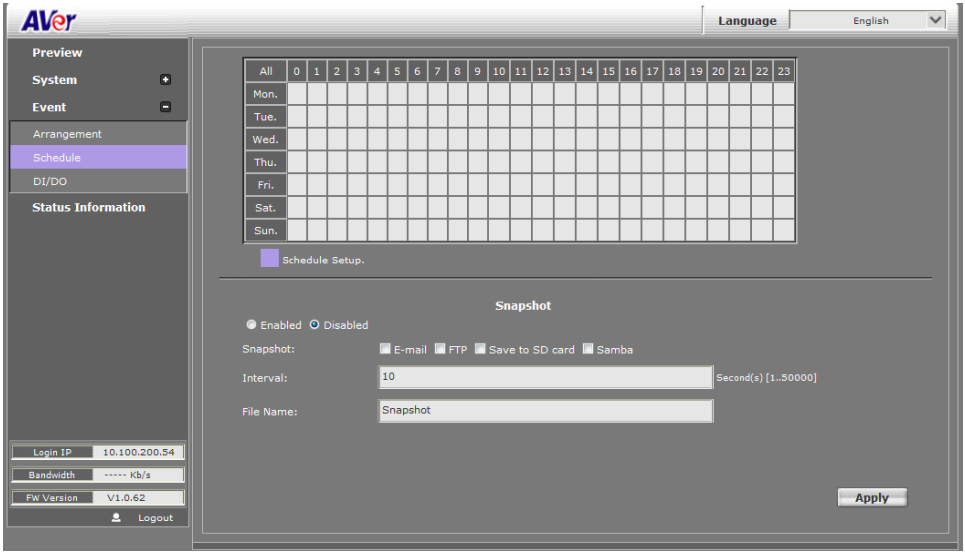
■ **PIR setting:**

Enable PIR function, the camera will be triggered when it detect PEOPLE in its detection range (within 5 Meter), and then send video or snapshot to specific mail addresses, trigger the output device, play sound, or save video to FTP/ Micro SD card/ Samba.

- Wave File: Select the audio file from drop-down list -- Police Pass, Car Alarm , Dog Barking, Firetruck Siren, and Record Wave File. Click Test button to play a selected audio file for testing.
- Interval: Select the interval time period (10 ~ 60 seconds). If you select "10 sec" here, once a person is detected and action is triggered, it cannot be triggered again within 10 seconds.
  [Note] The interval of two video files on SD/SDHC card is fixed with 30 seconds.
- Upload Wave File: Connect to PC to download the recorded audio file.
- Record Wave File: Record a audio file by your own.

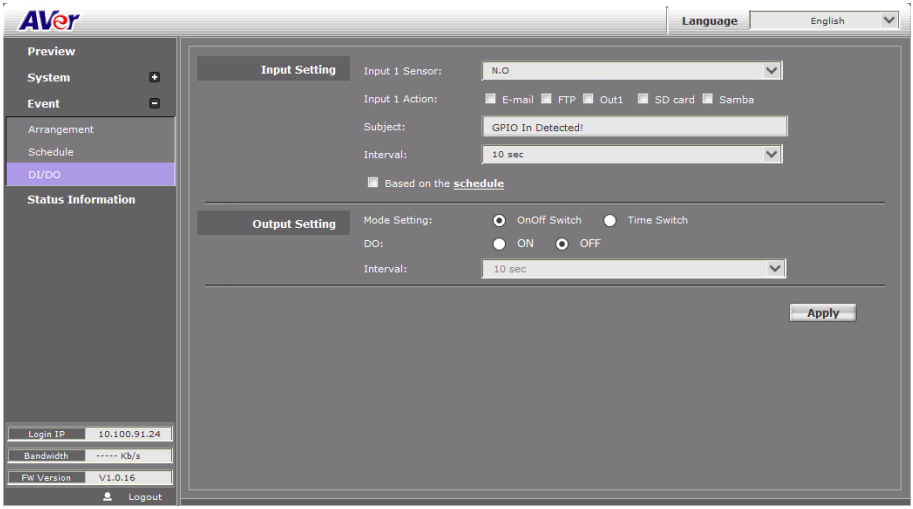
Event > Schedule

- **Schedule:** After complete the schedule setup, the camera data will be recorded according to the schedule setup.
- **Snapshot:** After enable the snapshot function; user can select the storage position of snapshot file, the **Interval time** of snapshot and the reserved **File Name** of snapshot.



Event > DI/DO

IP camera supports 1 input/1 output (depending on different models). When input is triggered, it can send the video to some specific mail addresses, transmit the video to remote ftp server, trigger the relay, and save video to local SD/SDHC card.



CAUTION!!

Please connect to propriety relay box to reduce the risk of electric shock & damage.

Input Setting:

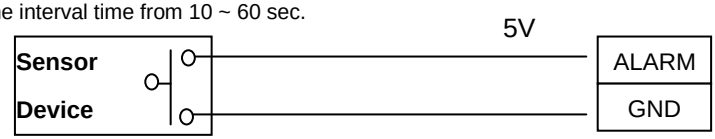
Input 1 sensor: This is to set the relay status while the sensor is not yet triggered.

Input 1 action: Send the triggered video clips or photos to the selected method.

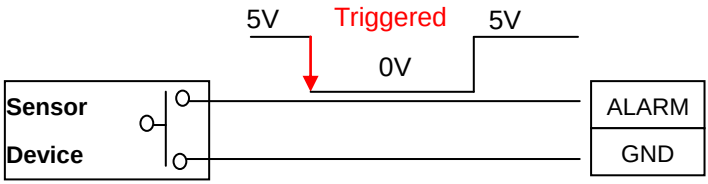
Subject: This is the subject while sending files via e-mail.

Interval: Set the interval time from 10 ~ 60 sec.

(1) Non-Triggered



(2) Triggered



Output Setting:

Mode setting:

OnOff Switch: Relay status is based on sensor triggered times.

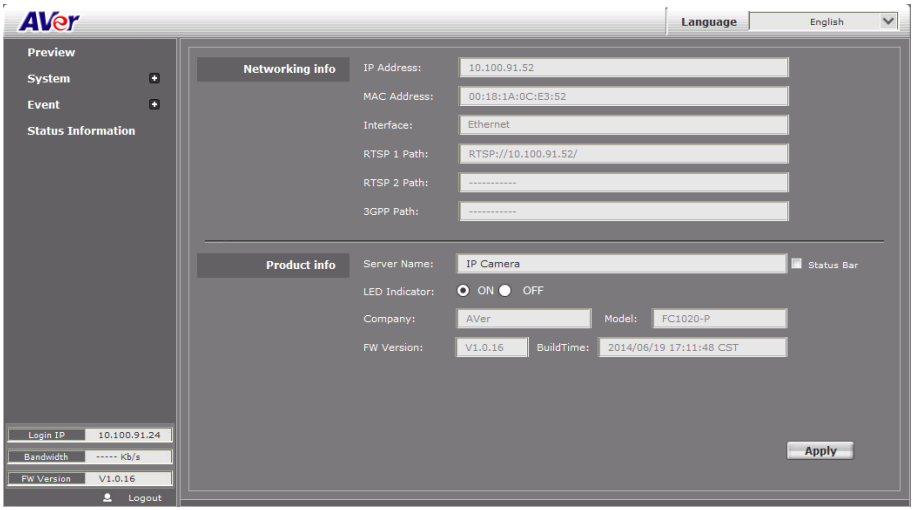
Time Switch: To restore the original relay status after the interval time.

[Note]GPIO pin define please refer to the part of Front / Back plane & I/O port pin assignment.

Ground (G)	**ALARM INPUT:**
DI	Normal: 5V (The voltage differential from ALM_IN pin & Ground) Active: 0V (Short the pin of ALM_IN and Ground pin)
DO	**RELAY OUTPUT:**
Ground(G)	MAX: 50 mA, DV 5V

Status Information

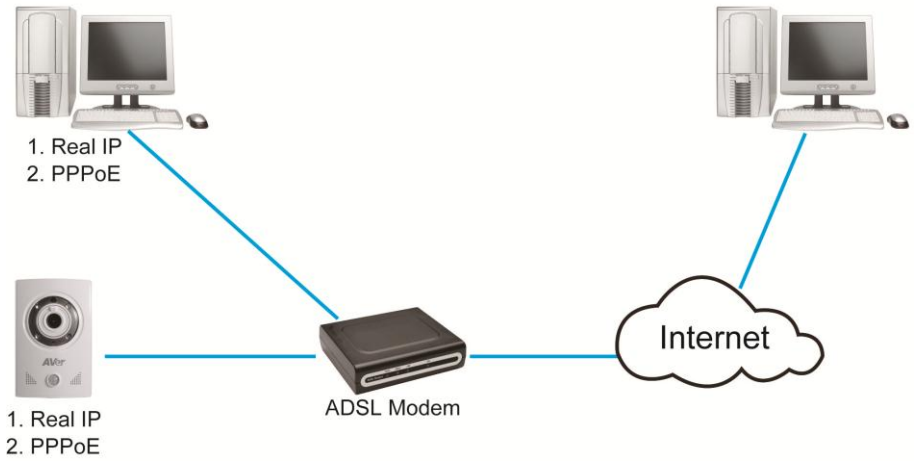
Click **Apply** button to save the configuration.



- **Networking Info:** Displays network information of the IP camera.
- **Product Info**
  - **Server Name:** Assigns a name to the IP camera and the name shows on the IP Installer. Also, displays the related information of the IP camera. Mark **Status Bar** to display the Server Name of IP camera on preview interface.
  - **LED indicator:** To disable or enable the LED indicator on the IP camera.

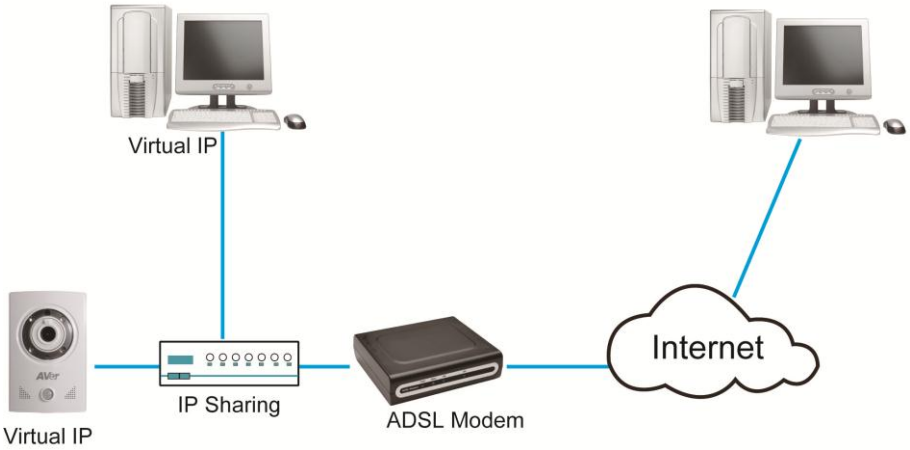
Network Configuration

■ **Configuration 1**



a. Internet Access: ADSL or Cable Modem
b. IP address: More than one real IP
c. IP camera and PC connect to the Internet
d. For fixed real IP, set up the IP into IP camera and PC. For dynamic IP, start PPPoE.

■ **Configuration 2**



a. Internet Access: ADSL or Cable Modem
b. IP address: one real IP
c. IP camera and PC connect to the Internet
d. Device needed: IP sharing
e. Use virtual IP, set up port forwarding in IP sharing.(Please refer to Network Setting→Other 1→UPnP Port Forwarding)

Factory Default

1. To recover the default IP address and password, please follow the following steps.
2. Remove power and Ethernet cable.

3. Press and hold the button and connect power and Ethernet cable to the camera again and hold for around 20 seconds for system booting.
4. Release the button when camera finishes the process.
5. Re-login the camera using the default IP (http://192.168.1.168) or DHCP, and user name (admin), password (admin).

Troubleshooting

Here are some useful tips on how to solve some common problems.

Problem	Solution
I forgot the account and password for FC1020-P. How can I go back to default setting?	Please refer to the manual of “Factory Default setting” description.
I recorded video file in H.264 file format but failed to playback on Media Player (V.9).	Default Windows Media Player doesn’t have H.264 decoder so that you can’t playback the file successfully. Please use VLC program to playback the video file. You can search this free program on Internet.
When I use Chinese words as the Gmail title while motion triggered, it turns to be nonsense characters displayed on my Gmail.	It’s the spec limitation and please only use English or numbers as mail title to avoid this phenomenon.
I use VLC and connect three RTSP streams (stream 1, 2, 3) at the same time. However, it can’t work properly.	Due to spec limitation, please connect one stream each time.

Appendix

FC1020-P is compliant with microSD/SDHC card and to ensure recording quality, and please use the following memory cards.

MicroSD/SDHC card
Transcend SD class4　32GB
Transcend SDHC class10　64GB
SanDisk SDHC class4　32GB
SanDisk SDHC class10　64GB

FCC NOTICE (Class A)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Federal Communications Commission Statement

NOTE- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by tuning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Class A ITE

Class A ITE is a category of all other ITE which satisfies the class A ITE limits but not the class B ITE limits. Such equipment should not be restricted in its sale but the following warning shall be included in the instructions for use:

Warning -This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

European Community Compliance Statement (Class A)

This product is herewith confirmed to comply with the requirements set out in the Council Directives on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility Directive 2004/108/EC.

Warning - This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures to correct this interference.

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THE MARK OF CROSSED-OUT WHEELED BIN INDICATES THAT THIS PRODUCT MUST NOT BE DISPOSED OF WITH YOUR OTHER HOUSEHOLD WASTE. INSTEAD, YOU NEED TO DISPOSE OF THE WASTE EQUIPMENT BY HANDING IT OVER TO A DESIGNATED COLLECTION POINT FOR THE RECYCLING OF WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT. FOR MORE INFORMATION ABOUT WHERE TO DROP OFF YOUR WASTE EQUIPMENT FOR RECYCLING, PLEASE CONTACT YOUR HOUSEHOLD WASTE DISPOSAL SERVICE OR THE SHOP WHERE YOU PURCHASED THE PRODUCT.

Limited Warranty

AVer Information, Inc. (“AVer”) warrants that the applicable product (“Product”) substantially conforms to AVer’s documentation for the product and that its manufacture and components are free of defects in material and workmanship under normal use. “You” as used in this agreement means you individually or the business entity on whose behalf you use or install the product, as applicable. This limited warranty extends only to You as the original purchaser. Except for the foregoing, the Product is provided “AS IS.” In no event does AVer warrant that You will be able to operate the Product without problems or interruptions, or that the Product is suitable for your purposes. Your exclusive remedy and the entire liability of AVer under this paragraph shall be, at AVer’s option, the repair or replacement of the Product with the same or a comparable product. This warranty does not apply to (a) any Product on which the serial number has been defaced, modified, or removed, or (b) cartons, cases, batteries, cabinets, tapes, or accessories used with this product. This warranty does not apply to any Product that has suffered damage, deterioration or malfunction due to (a) accident, abuse, misuse, neglect, fire, water, lightning, or other acts of nature, commercial or industrial use, unauthorized product modification or failure to follow instructions included with the Product, (b) misapplication of service by someone other than the manufacturer’s representative, (c) any shipment damages (such claims must be made with the carrier), or (d) any other causes that do not relate to a Product defect. The Warranty Period of any repaired or replaced Product shall be the longer of (a) the original Warranty Period or (b) thirty (30) days from the date of delivery of the repaired or replaced product.

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AVer makes no warranties to any third party. You are responsible for all claims, damages, settlements, expenses, and attorneys’ fees with respect to claims made against You as a result of Your use or misuse of the Product. This warranty applies only if the Product is installed, operated, maintained, and used in accordance with AVer specifications. Specifically, the warranties do not extend to any failure caused by (i) accident, unusual physical, electrical, or electromagnetic stress, neglect or misuse, (ii) fluctuations in electrical power beyond AVer specifications, (iii) use of the Product with any accessories or options not furnished by AVer or its authorized agents, or (iv) installation, alteration, or repair of the Product by anyone other than AVer or its authorized agents.

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In no event shall aver be liable for indirect, incidental, special, exemplary, punitive, or consequential damages of any nature including, but not limited to, loss of profits, data, revenue, production, or use, business interruption, or procurement of substitute goods or services arising out of or in connection with this limited warranty, or the use or performance of any product, whether based on contract or tort, including negligence, or any other legal theory, even if aver has advised of the possibility of such damages. AVer's total, aggregate liability for damages of any nature, regardless of form of action, shall in no event exceed the amount paid by you to aver for the specific product upon which liability is based.

Governing Law and Your Rights

This warranty gives you specific legal rights; You may also have other rights granted under state law. These rights vary from state to state.